## Open Source Michigan DH – Harvard

# Round 1 – Aff v Georgetown EM

## 1ac

### Plan

#### The United States federal government should substantially increase loan guarantees for energy produced by integral fast reactors using the S-PRISM design in the United States.

### Nuclear Leadership Adv

#### Adv 1: Nuclear leadership

#### Nuclear power is inevitable – Inaction on IFRs is killing US nuclear leadership

**Shuster 11** [Joseph Shuster, founder of Minnesota Valley Engineering and Chemical Engineer, 9-8-2011, "Response to Draft Report From Obama’s Blue Ribbon Commission (BRC) on America’s Nuclear Future dated July 29, 2011," Beyond Fossil Fools]

Contrary to the commission’s declarations on the matter, the U.S. is in danger of losing its once ¶ strong nuclear leadership. As a result we would have less to say about how nuclear materials are ¶ to be managed in the world and that could expose the U.S. to some inconvenient if not downright ¶ dangerous consequences. China is now building a large pilot plant said to be identical to our ¶ successful EBR-II plant that proved the design of the IFR. Meanwhile in the U.S. after complete ¶ success, EBR II was shut down, not for technical reasons but for political reasons during the ¶ Clinton administration, a decision destined to be one of the worst in our nation’s history.¶ Much of the world is already committed to a nuclear future with some countries eagerly waiting ¶ to license the American version of Generation IV Fast Reactors—the IFR. We still have the best ¶ IFR technology in the world but have squandered much of our lead, partly by allowing a largely ¶ unqualified commission two years of useless deliberation. What we really did was give our ¶ competitors an additional two years to catch up.

#### IFR restores leadership on nuclear issues – key to contain proliferation

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "IFR FaD context – the need for U.S. implementation of the IFR," 2/18/10) http://bravenewclimate.com/2010/02/18/ifr-fad-context/-http://bravenewclimate.com/2010/02/18/ifr-fad-context/

ON THE NEED FOR U.S. IMPLEMENTATION OF THE INTEGRAL FAST REACTOR¶ The IFR ties into a very big picture — international stability, prevention of war, and avoiding “proliferation” (spread) of nuclear weapons.¶ – The need for energy is the basis of many wars, including the ones we are engaged in right now (Iraq and Afghanistan). If every nation had enough energy to give its people a decent standard of living, that reason for conflict would disappear.¶ – The only sustainable energy source that can provide the bulk of the energy needed is nuclear power.¶ – The current need is for more thermal reactors — the kind we now use.¶ – But for the longer term, to provide the growing amount of energy that will be needed to maintain civilization, the only proven way available today is with fast-reactor technology.¶ – The most promising fast-reactor type is the IFR – metal-fueled, sodium-cooled, with pyroprocessing to recycle its fuel.¶ – Nobody knows yet how much IFR plants would cost to build and operate. Without the commercial-scale demo of the IFR, along with rationalization of the licensing process, any claims about costs are simply hand-waving guesses.¶ \* \* \* \*¶ Background info on proliferation (of nuclear weapons). Please follow the reasoning carefully.¶ – Atomic bombs can be made with highly enriched uranium (90% U-235) or with good-quality plutonium (bomb designers want plutonium that is ~93% Pu-239).¶ – For fuel for an LWR, the uranium only has to be enriched to 3 or 4% U-235.¶ – To make a uranium bomb you don’t need a reactor — but you do need access to an enrichment facility or some other source of highly enriched uranium…¶ – Any kind of nuclear reactor can be used to make weapons-quality plutonium from uranium-238, but the uranium has to have been irradiated for only a very short period. In other words, nobody would try to make a plutonium weapon from ordinary spent fuel, because there are easier ways to get plutonium of much better quality.¶ – Plutonium for a weapon not only has to have good isotopic quality, it also has to be chemically uncontaminated. Thus the lightly irradiated fuel has to be processed to extract the plutonium in a chemically pure form. But mere possession of a reactor is not sufficient for a weapons capability — a facility using a chemical process called PUREX is also needed.¶ – Regardless of how many reactors a country has, it cannot have a weapons capability unless it has either the ability to enrich uranium or to do PUREX-type fuel reprocessing.¶ – Therefore, the spread of weapons capability will be strongly inhibited if the only enrichment and reprocessing facilities are in countries that already have a nuclear arsenal.¶ – But that can only happen if countries with reactors (and soon that will be most of the nations of the world) have absolutely ironclad guarantees that they can get the fuel they need even if they can’t make their own, regardless of how obnoxious their political actions might be.¶ – Such guarantees will have to be backed up by some sort of international arrangement, and that can only come to pass if there is effective leadership for the laborious international negotiations that will have to take place. (For a relevant discussion, see here)¶ – At present, the only nation that has a realistic potential to be such a leader is the United States.¶ – But a country cannot be such a leader in the political arena unless it is also in the technological forefront.¶ – The United States used to be the reactor-technology leader, but it abandoned that role in 1994 when it terminated the development of the IFR.¶ – Since then, other nations — China, India, Japan, South Korea, Russia, France — have proceeded to work on their own fast-reactor versions, which necessarily will involve instituting a fuel-processing capability.¶ – Thus the United States is being left behind, and is rapidly losing its ability to help assure that the global evolution of the technology of nuclear energy proceeds in a safe and orderly manner.¶ – But maybe it’s not too late yet. After all, the IFR is the fast-reactor technology with the post promise (for a variety of reasons), and is ready for a commercial-scale demonstration to settle some uncertainties about how to scale up the pyroprocess as needed, to establish better limits on the expected cost of production units, and to develop an appropriate, expeditious licensing process.¶ – Such a demo will require federal seed money. It’s time to get moving.

#### Several impacts – 1st prolif

#### Transition to IFRs create a global proliferation resistant fuel cycle

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "Q%26A on Integral Fast Reactors – safe, abundant, non-polluting power," 9/18/10) <http://bravenewclimate.com/2010/09/18/ifr-fad-7/-http://bravenewclimate.com/2010/09/18/ifr-fad-7/>

Thermal reactors with reprocessing would do at least a little better.¶ Recycling (it would be with the PUREX process, or an equivalent) could stretch the U-235 supply another few decades—but remember the consequences: growing stockpiles of plutonium, pure plutonium streams in the PUREX plants, and the creation of 100,000-year plutonium mines.¶ If you’re going to talk about “PUREX” and “plutonium mines” you should say what they are. First, what’s PUREX?¶ It’s a chemical process developed for the nuclear weapons program, to separate plutonium from everything else that comes out of a reactor. Weapons require very pure plutonium, and that’s what PUREX delivers. The pyroprocess used in the IFR is very different. It not only does not, it cannot, produce plutonium with the chemical purity needed for weapons.¶ Why do you keep referring to “chemical” purity?¶ Because chemical and isotopic quality are two different things. Plutonium for a weapon has to be pure chemically. Weapons designers also want good isotopic quality—that is, they want at least 93% of their plutonium to consist of the isotope Pu- 239. A chemical process does not separate isotopes.¶ I see. Now, what about the “plutonium mines?”¶ When spent fuel or vitrified reprocessing waste from thermal reactors is buried, the result is a concentrated geological deposit of plutonium. As its radioactivity decays, those deposits are sources of raw material for weapons, becoming increasingly attractive over the next 100,000 years and more (the half-life of Pu-239 being 24,000 years).¶ You listed, back at the beginning, some problems that the IFR would ameliorate. A lot of those problems are obviously related to proliferation of nuclear weapons.¶ Definitely. For instance, although thermal reactors consume more fuel than they produce, and thus are not called “breeders,” they inescapably are prolific breeders of plutonium, as I said. And that poses serious concerns about nuclear proliferation. And proliferation concerns are even greater when fuel from thermal reactors is recycled, since the PUREX method is used. IFRs have neither of those drawbacks.¶ Why does it seem that there is more proliferation-related concern about plutonium than about uranium? Can’t you make bombs from either?¶ Yes. The best isotopes for nuclear explosives are U-235, Pu- 239, and U-233. Only the first two of those, however, have been widely used. All the other actinide isotopes, if present in appreciable quantity, in one way or another complicate the design and construction of bombs and degrade their performance. Adequate isotopic purity is therefore important, and isotopic separation is much more difficult than chemical separation. Even so, with plutonium of almost any isotopic composition it is technically possible to make an explosive (although designers of military weapons demand plutonium that is at least 93% Pu-239), whereas if U-235 is sufficiently diluted with U-238 (which is easy to do and hard to undo), the mixture cannot be used for a bomb.¶ High-quality plutonium is the material of choice for a large and sophisticated nuclear arsenal, while highly enriched uranium would be one of the easier routes to a few crude nuclear explosives.¶ So why the emphasis on plutonium?¶ You’re asking me to read people’s minds, and I’m not good at that. Both uranium and plutonium are of proliferation concern.¶ Where is the best place for plutonium?¶ Where better than in a reactor plant—particularly an IFR facility, where there is never pure plutonium (except some, briefly, when it comes in from dismantled weapons), where the radioactivity levels are lethal, and where the operations are done remotely under an inert, smothering atmosphere? Once enough IFRs are deployed, there never will need to be plutonium outside a reactor plant—except for the then diminishing supply of plutonium left over from decades of thermal-reactor operation.¶ How does the IFR square with U.S. policy of discouraging plutonium production, reprocessing and use?¶ It is entirely consistent with the intent of that policy—to render plutonium as inaccessible for weapons use as possible. The wording of the policy, however, is now obsolete.¶ How so?¶ It was formulated before the IFR’s pyroprocessing and electrorefining technology was known—when “reprocessing” was synonymous with PUREX, which creates plutonium of the chemical purity needed for weapons. Since now there is a fuel cycle that promises to provide far-superior management of plutonium, the policy has been overtaken by events.¶ Why is the IFR better than PUREX? Doesn’t “recycling” mean separation of plutonium, regardless of the method?¶ No, not in the IFR—and that misunderstanding accounts for some of the opposition. The IFR’s pyroprocessing and electrorefining method is not capable of making plutonium that is pure enough for weapons. If a proliferator were to start with IFR material, he or she would have to employ an extra chemical separation step.¶ But there is plutonium in IFRs, along with other fissionable isotopes. Seems to me that a proliferator could take some of that and make a bomb.¶ Some people do say that, but they’re wrong, according to expert bomb designers at Livermore National Laboratory. They looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible—far, far harder than using today’s reactor-grade plutonium.¶ So? Why wouldn’t they use chemical separation?¶ First of all, they would need a PUREX-type plant—something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium—of any isotopic quality—this is probably the all-time, hands-down hardest.¶ The Long Term¶ Does the plutonium now existing and being produced by thermal reactors raise any proliferation concerns for the long term?¶ It certainly does. As I said earlier, burying the spent fuel from today’s thermal reactors creates geological deposits of plutonium whose desirability for weapons use is continually improving. Some 30 countries now have thermal-reactor programs, and the number will grow. To conceive of that many custodial programs being maintained effectively for that long is a challenge to the imagination. Since the IFR can consume plutonium, it can completely eliminate this long-term concern.¶ Are there other waste-disposal problems that could be lessened?¶ Yes. Some constituents of the waste from thermal reactors remain appreciably radioactive for thousands of years, leading to 10,000-year stability criteria for disposal sites. Waste disposal would be simpler if that time frame could be shortened. With IFR waste, the time of concern is less than 500 years.¶ What about a 1994 report by the National Academy of Sciences? The Washington Post said that the NAS report “denounces the idea of building new reactors to consume plutonium.”¶ That characterization of the report is a little strong, but it is true that the members of the NAS committee seem not to have been familiar with the plutonium-management potential of the IFR. They did, however, recognize the “plutonium mine” problem. They say (Executive Summary, p.3):¶ Because plutonium in spent fuel or glass logs incorporating high-level wastes still entails a risk of weapons use, and because the barrier to such use diminishes with time as the radioactivity decays, consideration of further steps to reduce the long-term proliferation risks of such materials is required, regardless of what option is chosen for [near-term] disposition of weapons plutonium. This global effort should include continued consideration of more proliferation-resistant nuclear fuel cycles, including concepts that might offer a long-term option for nearly complete elimination of the world’s plutonium stocks. The IFR, obviously, is just such a fuel cycle—a prime candidate for “continued consideration.”

#### We’re on the brink of rapid prolif – access to tech is inevitable and multilateral institutions fail

**CFR 12** [CFR 7-5-2012, "The Global Nuclear Nonproliferation Regime," Council on Foreign Relations]

Nuclear weapons proliferation, whether by state or nonstate actors, poses one of the greatest threats to international security today. Iran's apparent efforts to acquire nuclear weapons, what amounts to North Korean nuclear blackmail, and the revelation of the A.Q. Khan black market nuclear network all underscore the far-from-remote possibility that a terrorist group or a so-called rogue state will acquire weapons of mass destruction or materials for a dirty bomb.¶ The problem of nuclear proliferation is global, and any effective response must also be multilateral. Nine states (China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States) are known or believed to have nuclear weapons, and more than thirty others (including Japan, Germany, and South Korea) have the technological ability to quickly acquire them. Amid volatile energy costs, the accompanying push to expand nuclear energy, growing concerns about the environmental impact of fossil fuels, and the continued diffusion of scientific and technical knowledge, access to dual-use technologies seems destined to grow.¶ In the background, a nascent global consensus regarding the need for substantial nuclear arms reductions, if not complete nuclear disarmament, has increasingly taken shape. In April 2009, for instance, U.S. president Barack Obama reignited global nonproliferation efforts through a landmark speech in Prague. Subsequently, in September of the same year, the UN Security Council (UNSC) unanimously passed Resolution 1887, which called for accelerated efforts toward total nuclear disarmament. In February 2012, the number of states who have ratified the Comprehensive Test Ban Treaty increased to 157, heightening appeals to countries such as the United States, Israel, and Iran to follow suit.¶ Overall, the existing global nonproliferation regime is a highly developed example of international law. Yet, despite some notable successes, existing multilateral institutions have failed to prevent states such as India, Pakistan, and North Korea from "going nuclear," and seem equally ill-equipped to check Iran as well as potential threats from nonstate, terrorist groups. The current framework must be updated and reinforced if it is to effectively address today's proliferation threats, let alone pave the way for "the peace and security of a world without nuclear weapons."

#### New proliferators will be uniquely destabilizing -- guarantees conflict escalation.

Cimbala, ‘8

[Stephen, Distinguished Prof. Pol. Sci. – Penn. State Brandywine, Comparative Strategy, “Anticipatory Attacks: Nuclear Crisis Stability in Future Asia”, 27, InformaWorld]

If the possibility existed of a mistaken preemption during and immediately after the Cold War, between the experienced nuclear forces and command systems of America and Russia, then it may be a matter of even more concern with regard to states with newer and more opaque forces and command systems. In addition, the Americans and Soviets (and then Russians) had a great deal of experience getting to know one another’s military operational proclivities and doctrinal idiosyncrasies, including those that might influence the decision for or against war. Another consideration, relative to nuclear stability in the present century, is that the Americans and their NATO allies shared with the Soviets and Russians a commonality of culture and historical experience. Future threats to American or Russian security from weapons of mass destruction may be presented by states or nonstate actors motivated by cultural and social predispositions not easily understood by those in the West nor subject to favorable manipulation during a crisis. The spread of nuclear weapons in Asia presents a complicated mosaic of possibilities in this regard. States with nuclear forces of variable force structure, operational experience, and command-control systems will be thrown into a matrix of complex political, social, and cultural crosscurrents contributory to the possibility of war. In addition to the existing nuclear powers in Asia, others may seek nuclear weapons if they feel threatened by regional rivals or hostile alliances. Containment of nuclear proliferation in Asia is a desirable political objective for all of the obvious reasons. Nevertheless, the present century is unlikely to see the nuclear hesitancy or risk aversion that marked the Cold War, in part, because the military and political discipline imposed by the Cold War superpowers no longer exists, but also because states in Asia have new aspirations for regional or global respect.12 The spread of ballistic missiles and other nuclear-capable delivery systems in Asia, or in the Middle East with reach into Asia, is especially dangerous because plausible adversaries live close together and are already engaged in ongoing disputes about territory or other issues.13 The Cold War Americans and Soviets required missiles and airborne delivery systems of intercontinental range to strike at one another’s vitals. But short-range ballistic missiles or fighter-bombers suffice for India and Pakistan to launch attacks at one another with potentially “strategic” effects. China shares borders with Russia, North Korea, India, and Pakistan; Russia, with China and NorthKorea; India, with Pakistan and China; Pakistan, with India and China; and so on. The short flight times of ballistic missiles between the cities or military forces of contiguous states means that very little time will be available for warning and attack assessment by the defender. Conventionally armed missiles could easily be mistaken for a tactical nuclear first use. Fighter-bombers appearing over the horizon could just as easily be carrying nuclear weapons as conventional ordnance. In addition to the challenges posed by shorter flight times and uncertain weapons loads, potential victims of nuclear attack in Asia may also have first strike–vulnerable forces and command-control systems that increase decision pressures for rapid, and possibly mistaken, retaliation. This potpourri of possibilities challenges conventional wisdom about nuclear deterrence and proliferation on the part of policymakers and academic theorists. For policymakers in the United States and NATO, spreading nuclear and other weapons of mass destruction in Asia could profoundly shift the geopolitics of mass destruction from a European center of gravity (in the twentieth century) to an Asian and/or Middle Eastern center of gravity (in the present century).14 This would profoundly shake up prognostications to the effect that wars of mass destruction are now passe, on account of the emergence of the “Revolution in Military Affairs” and its encouragement of information-based warfare.15 Together with this, there has emerged the argument that large-scale war between states or coalitions of states, as opposed to varieties of unconventional warfare and failed states, are exceptional and potentially obsolete.16 The spread of WMD and ballistic missiles in Asia could overturn these expectations for the obsolescence or marginalization of major interstate warfare.

#### Nuclear war

Henry **Sokolski, 2009** (executive director of the Nonproliferation Policy Education Center, serves on the U.S. congressional Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism; Avoiding a Nuclear Crowd; http://www.hoover.org/publications/policyreview/46390537.html#n14)

Combine these proliferation trends with the others noted above and one could easily create the perfect nuclear storm: Small differences between nuclear competitors that would put all actors on edge; an overhang of nuclear materials that could be called upon to break out or significantly ramp up existing nuclear deployments; and a variety of potential new nuclear actors developing weapons options in the wings. In such a setting, the military and nuclear rivalries between states could easily be much more intense than before. Certainly each nuclear state’s military would place an even higher premium than before on being able to weaponize its military and civilian surpluses quickly, to deploy forces that are survivable, and to have forces that can get to their targets and destroy them with high levels of probability. The advanced military states will also be even more inclined to develop and deploy enhanced air and missile defenses and long-range, precision guidance munitions, and to develop a variety of preventative and preemptive war options. Certainly, in such a world, relations between states could become far less stable. Relatively small developments — e.g., Russian support for sympathetic near-abroad provinces; Pakistani-inspired terrorist strikes in India, such as those experienced recently in Mumbai; new Indian flanking activities in Iran near Pakistan; Chinese weapons developments or moves regarding Taiwan; state-sponsored assassination attempts of key figures in the Middle East or South West Asia, etc. — could easily prompt nuclear weapons deployments with “strategic” consequences (arms races, strategic miscues, and even nuclear war). As Herman Kahn once noted, in such a world “every quarrel or difference of opinion may lead to violence of a kind quite different from what is possible today.”23 In short, we may soon see a future that neither the proponents of nuclear abolition, nor their critics, would ever want.

#### 2nd terrorism – spent nuclear fuel is exposed in the status quo – fast reactors solve

**Nuclear Threat Initiative 12** [Nuclear Threat Initiative, 8-1-2012, "Why Is Highly Enriched Uranium a Threat?" Prepared by the James Martin Center for Nonproliferation Studies at the Monterey Institute of International Studies]

The most difficult challenge for a terrorist organization seeking to build a nuclear weapon or improvised nuclear device is obtaining fissile material, either plutonium or highly enriched uranium (HEU). HEU, uranium that has been processed to increase the proportion of the U-235 isotope to over 20%, is required for the construction of a gun-type nuclear device, the simplest type of nuclear weapon. The greater the proportion of U-235 (i.e. the higher the enrichment level), the less material is needed for a nuclear explosive device. Weapons-grade uranium generally refers to uranium enriched to at least 90%, but material of far lower enrichment levels, found in both fresh and spent nuclear fuel, can be used to create a nuclear explosive device.¶ In 2002, the U.S. National Research Council warned that "crude HEU weapons could be fabricated without state assistance," noting that "the primary impediment that prevents countries or technically competent terrorist groups from developing nuclear weapons is the availability of [nuclear material], especially HEU."[1] Creating a nuclear weapon from HEU is technically easier than building a plutonium weapon. Moreover, current technology is unlikely to detect a shielded nuclear device on a truck or boat. Therefore, securing and eliminating stocks of HEU is the surest way to decrease the risk that terrorist groups could use this material to create a nuclear explosion.¶ Where Is Civilian HEU Located?¶ Experts estimate that approximately 70 tons of HEU are used in civilian applications worldwide. [2] As little as 25 kilograms (kg) of U-235 (which amounts to about 28kg of HEU enriched to 90%) is needed to produce a nuclear weapon; about 40-60kg is needed for a cruder nuclear device. [3] Bomb-grade material can be obtained from HEU that is fresh (unirradiated), and irradiated (also referred to as spent). Fresh and lightly irradiated fuel (such as fuel used in critical assemblies and pulse reactors) is not significantly radioactive, and is therefore relatively safe to handle. Although using nuclear fuel in high-powered reactors initially makes it highly radioactive and thus very difficult to handle safely (often this fuel is referred to as "self-protecting"), spent fuel loses its radioactivity over time, making it easier to handle and potentially more attractive to terrorists.¶ HEU is currently used in the civilian sphere to fuel research reactors, critical assemblies, pulsed reactors, and a few fast reactors. According to the International Atomic Energy Agency (IAEA), 244 research reactors are in operation or temporarily shut down across 56 countries. A further 441 reactors have been shut down or decommissioned, while eight are planned or under construction. [4]

#### That’s key to the nuclear taboo – solves nuclear war

Bin ‘9(5-22-09 About the Authors Prof. Li Bin is a leading Chinese expert on arms control and is currently the director of Arms Control Program at the Institute of International Studies, Tsinghua University. He received his Bachelor and Master Degrees in Physics from Peking University before joining China Academy of Engineering Physics (CAEP) to pursue a doctorate in the technical aspects of arms control. He served as a part-time assistant on arms control for the Committee of Science, Technology and Industry for National Defense (COSTIND).Upon graduation Dr. Li entered the Institute of Applied Physics and Computational Mathematics (IAPCM) as a research fellow and joined the COSTIND technical group supporting Chinese negotiation team on Comprehensive Test Ban Treaty (CTBT). He attended the final round of CTBT negotiations as a technical advisor to the Chinese negotiating team. Nie Hongyi is an officer in the People’s Liberation Army with an MA from China’s National Defense University and a Ph.D. in International Studies from Tsinghua University, which he completed in 2009 under Prof. Li Bin. )

The nuclear taboo is a kind of international norm and this type of norm is supported by the promotion of the norm through international social exchange. But at present the increased **threat of nuclear terrorism has lowered people’s confidence that nuclear weapons will not be used**. China and the United States have a broad common interest in combating nuclear terrorism. **Using technical and institutional measures to break the foundation of nuclear terrorism and lessen the possibility of a nuclear terrorist attack can** not only weaken the danger of nuclear terrorism itself but also **strengthen people’s confidence in the nuclear taboo**, and in this way preserve an international environment beneficial to both China and the United States. In this way **even if there is crisis** in China-U.S. relations caused by conflict, **the nuclear taboo can** also help both countries **reduce suspicions** about the nuclear weapons problem, **avoid miscalculation and thereby reduce the danger of a nuclear war.**

#### 3rd competitiveness – US is ceding nuclear competitiveness now

**Barton 11** [Charles Barton, Nuclear Green, “Have the Chinese Been Reading Energy from Thorium or Nuclear Green?” 1/31/11]

Last week the Chinese Academy of Science announced that it planned to finance the development of a Chinese Thorium Breeding Molten Salt Reactor (TMSR) or as it is called in the United States, the Liquid Fluoride Thorium Reactor (LFTR). The announcement came in a news report from Weihui.news365.com.cn. The announcement was relayed to Westerners who were interested in Thorium breeding molten salt reactors in a discussion thread comment posted by Chinese Scientist Hua Bai, last Friday. Kirk Sorensen, Brian Wang, and I all posted about Bai's announcement on Sunday, January 30.¶ In addition to these posts, the thread which Hua Bai started contains the revelation that the engineer who heads the Chinese Molten Salt Reactor Project is none other than Jiang Mianheng, a son of Retired Chinese President, Jiang Zemin. In addition to being President of People's China, Jiang was the chairmanship of the powerful Central Military Commission, suggesting the likelihood that Jiang Mianheng has military ties. He is the cofounder of Semiconductor Manufacturing International Corporation, and a former lead researcher in the Chinese Space Program, as well as Vice President of the Chinese Academy of Sciences. The presence of such a well connected Chinese science leader suggests that the Chinese TMSR project is regarded as important by the Chinese leadership. Thus the Chinese leadership, unlike the American Political andscientific leadership has grasped the potential of molten salt nuclear technology.¶ Yesterday, "horos11" commented on my blog, Nuclear Green,¶ I read this, and I didn't know whether to laugh or cry.¶ After all, this site and others have been sounding the clarion call to action on this, and I should be glad that someone finally heeded it and its getting traction in a place that really matters, but I have a sinking feeling that:¶ a. its going to take far less than their planned 20 years¶ b. they are going to succeed beyond their wildest expectations.¶ Which means that the next, giant sucking sound we may hear is the sound of the 5 trillion dollar energy market heading east, further depressing our economy, weakening the dollar (and the euro) and ultimately making the US economy dependent on rescue from the chinese in the future (when they are done rescuing themselves).¶ Yet, in the large scheme of things, this is a definite good, and may be our savior from anthropomorphic climate change.¶ so again, laugh? or cry. I guess its up to how you view things - I guess I'm tentatively laughing at the moment, but mostly from the overwhelming irony of all this.¶ Jason Ribeiro added,¶ I can't help but have a feeling of sour grapes about this. While I congratulate China for doing the obvious, America has its head buried so far in the sand it can't see straight. With all the internet clamor about LFTR that's been going on the internet in the past 3-4 years, it was the non-English speaking Chinese that finally got the message that this was a great idea worth investing in. Our leadership ought to be ashamed of themselves.¶ The Chinese News story on the Thorium Molten Salt Reactor reflects the clear Chinese thinking about the potential role of LFTRs in the future Chinese energy economy. I will paraphrase,¶ "the future of advanced nuclear fission energy - nuclear energy, thorium-based molten salt reactor system" project was officially launched. . . The scientific goal is to developed a new generation of nuclear energy systems [and to achieve commercial] use [in] 20 years or so. We intend to complete the technological research needed for this system and to assert intellectual property rights to this technology. Fossil fuel energy is being depleted, and solar and wind energy are not stable enough, while hydropower development has reached the limit of its potential.. . .¶ Nuclear power seems to offer us a very attractive future energy choice, high energy density, low carbon emissions, and the potential for sustainable development. . . . China has chosen {to make an energy] breakthrough in the direction of molten salt reactors. . . . this liquid fuel reactors has a simple structure and can run at atmospheric pressure, [it can use any fissionable material as fuel} and has other advantages. "This new stove" can be made very small, will operate with stabile nuclear fuel, and will run for several decades before replacement. After the thorium is completely used in the nuclear process the TMSR will produce nuclear waste will be only be one-thousandth of that produced by existing nuclear technologies.¶ As the world is still in the development of a new generation of nuclear reactors, the thorium-based independent research and development of molten salt reactors, will be possible to obtain all intellectual property rights. This will enable China to firmly grasp the lifeline of energy in their own hands.¶ Let the word "nuclear" no longer mean war.¶ In the past, people always talk about "core" colors. The Hiroshima atomic bomb, the Chernobyl nuclear power plant explosion, these are like a lingering nightmare that is marked in human history. But a new generation of nuclear power will take the color green, the mark of peace taking human beings into a new era.¶ Oh Wow! It sounds as if someone in China has been reading Nuclear Green or Energy from Thorium. And there is more!¶ In addition, the "new stove" operating at atmospheric pressure operation, rather than the traditional reactor operating at high pressure, will be simple and safe. "When the furnace temperature exceeds a predetermined value, in the bottom of the MSR core, a frozen plug of salt will automatically melt, releasing the liquid salt in the reactor core into an emergency storage tanks, and terminating the nuclear reaction," scientist Xu Hongjie told reporters, as the cooling agent is fluoride salts (the same salts that also carrying the nuclear fuel), after the liquid salt cools it turns solid, which prevents the nuclear fuel from leaking out of its containment, and thus will not pollute ground water causing an ecological disasters. The added safety opens up new possibilities for reactors, they can be built underground, completely isolating radioactive materials from the reactor, also the underground location will protect the reactor from an enemy's weapon attack. Reactors can be built in large cities, in the wilderness, or in remote villages.¶ Well Kirk Sorensen and I wanted our ideas to become national priorities. We just did not know in what country it would happen first. Unfortunately the leadership of the United States, continues to be determined to lead this nation into the wilderness of powerlessness, while the leadership of communist China is alert to the possibilities of a new energy age. Possibilities that can be realized by molten salt nuclear technology. Lets hope that someone in the White House or Congress wakes up. The Chinese understand the implications of their venture into Molten Salt nuclear technology. The American leadership does not.

#### That’s crucial to overall competitiveness

**Barton 10** (Charles Barton, Nuclear Green "Keeping up with China: The Economic Advantage of Molten Salt Nuclear Technology," 12/1/10)

American and European nuclear development can either proceed by following the cost lowering paths being pioneered in Asia, or begin to develop low cost innovative nuclear plans. Since low labor costs, represent the most significant Chinese and Indian cost advantage, it is unlikely that European and American reactor manufacturers will be able to compete with the Asians on labor costs. Labor costs for conventional reactors can be lowered by factory construction of reactor componant moduels, but the Chinese are clearly ahead of the West in that game. Yet the weakness of the Chinese system is the relatively large amount of field labor that the manufacture of large reactors requires.¶ The Chines system is to introduce labor saving devices where ever and when ever possible, but clearly shifting labor from the field to a factory still offers cost advantages. The more labor which can be performed in the factory, the more labor cost savings are possible. Other savings advantages are possible by simplifying reactor design, and lowering materials input. Building a reactor with less materials and fewer parts lowers nuclear costs directly and indirectly. Decreasing core size per unit of power output also can contribute a cost advantage. Direct saving relate to the cost of parts and matetials, but fewer parts and less material also means less labor is required to put things together, since there is less to put together. In addition a small reactor core structure, would, all other things being equal, require a smaller housing. Larger cores mean more structural housing expenses.¶ While the Pebel Bed Modular Reactor has a relatively simple core design, the actual core is quite large, because of the cooling inefficiency of helium. Thus, the simplisity of the PBMR core is ballanced by its size, its total materials input, and the size of its housing. The large core and housing requirements of the PBMR also adds to its labor costs, especially its field labor cost. Thus while the simplisity of the PBMR core design would seem to suggest a low cost, this expectation is unlikely to br born out in practice.¶ Transportation limits ability to shift production from the field to the factory. An analysis preformed by the University of Tennessee's, and the Massachusettes Institute of Technology's Departments of Nuclear Engineering looked at the 335 MW Westinghouse IRIS reactor. The analysis found,¶ A rough estimate of the weight for a 1000 MWt modular reactor and its secondary system, similar to the Westinghouse IRIS plant, is taken as the summation of all of the major components in the analysis. Many of the smaller subcomponents have been neglected. The containment structure contributes ~2.81E6 kg (3100 tons). The primary reactor vessel and the turbo-generator contribute ~1.45E6 kg (1600 tons) each. The heat exchange equipment and piping contribute ~6.78E5 kg (747 tons). Therefore, the total weight of the major plant components is~ 6.39E6 kg (7047 tons).¶ The weight and width of the IRIS would place constraints of barge transportation of the IRIS on the Tennessee and Ohio Rivers. The report stated,¶ The Westinghouse barge mounted IRIS reactor modules were limited in size based on input from the University of Tennessee. The barge dimension limitations were established to be 30 meters (98’-5”) wide, 100 meters (328’-1”) long, with a 2.74 meter (9’) draft. These dimensions establish the barge maximum displacement at 8,220 metric tons. In addition, the barge(s) are limited to ~20 meters (65’-7”) in height above the water surface, so that they fit under crossing bridges and can be floated up the Mississippi, Ohio, and Tennessee Rivers as far as the city of Chattanooga, Tennessee. Further movement above Chattanooga is currently limited by the locks at the Chickamauga Reservoir dam.¶ The above barge displacement limitation will impose severe limits on how much structural support and shield concrete can be placed in the barge modules at the shipyard. For example, the estimated weight of concrete in the IRIS containment and the surrounding cylindrical shield structure alone greatly exceeds the total allowable barge displacement. This however does not mean that barge- mounted pressurized water reactors (PWRs) are not feasible. It does mean that barge-mounted PWRs need to employ steel structures that are then used as the forms for the addition of needed concrete after the barge has been floated into its final location and founded.¶ Thus for the IRIS, barge transportation presented problems, and rail transportation was unthinkable. The core of the 125 MW B&W mPower reactor is rail transportable, but final onsite mPower assembly/construction became a significant undertaking, with a consequent increase in overall cost. The core unit does include a pressure vessel and heat exchange mounted above the actual reactor, but many other mPower component modules must be transported seperately and assembled on site.¶ The IIRIS project demonstrates the unlikelihood of whole small reactors being transported to the field ready for energy production without some field construction. This might be possible, however, for mini reactors that are two small to be viewed as a plausible substitute for the fossil fuel powered electrical plants currently supplying electricity for the grid. This then leaves us with¶ with a gap between the cost savings potential of factory manufacture, and the costly process of onsite assembly. B&W the manufacturers of the small 125 MW MPower reactor still has not clarified what percentage of the manufacturing process would be factory based. It is clear, however that B&W knows where it is comming from and what its problems are, as Rod Adams tells us:¶ I spoke in more detail to Chris Mowry and listened as he explained how his company's research on the history of the nuclear enterprise in the US had revealed that 30% of the material and labor cost of the existing units came from the supplied components while 70% was related to the site construction effort. He described how the preponderance of site work had influenced the cost uncertainty that has helped to discourage new nuclear plant construction for so many years.¶ What Mowey did not tell Adams is what percentage of the materials and labor costs will be shifted to the factory as mPower reactors are produced. There have been hints that a significant percentage of the mPower manufacturing process, perhaps as much as 50% will still take place on site. B&W still is working on the design of their manufacturing process, and thus do not yet know all of the details. Clearly then more work needs to be done on controlling onsite costs.¶ Finally, a shift to advanced technology will can lower manufacturing costs. Compared to Light Water reactors, Liquid metal cooled reactors use less material and perhaps less labor, but pool type liqiod metal reactors are not compact. Compared to Liquid Metal cooled reactors, Molten Salt cooled reactor will have more compact cores. Shifting to closed cycle gas turbines will decrease construction costs. The added safety of Molten Salt cooled reactors will increase reactor simplification, and thus further lower labor and materials related construction costs.¶ The recycling of old power plant locations will also offer some savings. Decreasing manufacturing time will lower interest costs. ¶ All in all there are a lot of reasons to expect lower nuclear manufacturing costs with Generation IV nuclear power plants, and at present no one has come up with a good reason for expecting Molten Salt cooled reactors to cost more than traditional NPPs. The argument, however, is not iron clad. Even if no one has pointed out plasuible errors in it, we need to introduce the caviot that expectations frenquently are not meet. It is possible, for example that the NRC might impose unreasonable expectations on molten salt cooled reactors. Demanding, for example, that they include the same safety features as LWRs, even though they do not have many LWR safety problems. But the potential savings on the cost of energy by adopting molten salt nuclear technology is substantial, and should not be ignored. ¶ To return to the problem posed by Brian Wang, the problem of lower Asian nuclear construction costs. If Europe and the United States cannot meet the Asican energy cost challenge, their economies will encounter a significant decline. Because of Labor cost advantages, it is unlikely that Generation III nuclear plants will ever cost less to build in the United States or Europe than in Asia. in order to keep the American and European economies competitive, the United States and Europe must adopt a low cost, factory manufactured nuclear technology. Molten Salt nuclear technology represents the lowest cost approach, and is highly consistent with factory manufacture and other cost lowering approaches. Couple to that the outstanding safety of molten salt nuclear technology, the potential for dramatically lowering the creation of nuclear waste, and the obsticles to nuclear proliferation posed by molten salt nuclear rechnology, and we see a real potential for keeping the American and European economies competitive, at least as far as energy costs are concerned.

#### Competitiveness prevents great power war – and economic perception is key

**Baru 9** - Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore (Sanjaya, “Year of the power shift?,”

http://www.india-seminar.com/2009/593/593\_sanjaya\_baru.htm

**T**here is no doubt that economics alone will not determine the balance of global power, but there is no doubt either that economics has come to matter for more.¶ The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s *Arthashastra* says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5¶ In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others.¶ ‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s *military-power* balance have followed alterations in the *productive* balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7¶ **I**n Kennedy’s view the geopolitical consequences of an economic crisis or even decline would be transmitted through a nation’s inability to find adequate financial resources to simultaneously sustain economic growth and military power – the classic ‘guns vs butter’ dilemma.¶ Apart from such fiscal disempowerment of the state, economic under-performance would also reduce a nation’s attraction as a market, a source of capital and technology, and as a ‘knowledge power’. As power shifted from Europe to America, so did the knowledge base of the global economy. As China’s power rises, so does its profile as a ‘knowledge economy’.¶ Impressed by such arguments the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China’s political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.8¶ While China’s impressive economic performance and the consequent rise in China’s global profile has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington DC. We must expect a revival of interest in Kennedy’s arguments in the current context.¶ **A** historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the ‘square of power’ as the tax bureaucracy, the parliament, the national debt and the central bank. These four institutions of ‘fiscal empowerment’ of the state enable nations to project power by mobilizing and deploying financial resources to that end.9 ¶ Ferguson shows how vital sound economic management is to strategic policy and national power. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet empires and that of the United States of America. In an early comment on the present financial crisis, Ferguson wrote:¶ ‘We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US… It remains to be seen how quickly today’s financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America’s quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors*. …*as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient Oriental empires (not only the Ottoman but also the Persian and Chinese) to Western Europe. Today the shift is from the US – and other western financial centres – to the autocracies of the Middle East and East Asia.’10 ¶ An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union the financial crunch caused by the Afghan war came on top of years of economic under-performance and the loss of political legitimacy of the Soviet state. In a democratic society like the United States the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet state was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it.¶ Hence, one must not become an economic determinist and historic parallels need not always be relevant. Politics can intervene and offer solutions. Political economy and politics, in the form of Keynesian economics and the ‘New Deal’, did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today’s America remains to be seen.

#### Independently, nuclear power is an effective stimulus

**Somsel 9** [January 23, 2009, “Productive stimulus: Fast-track nuclear power”, By Joseph Somsel, MBA from California Polytechnic University, nuclear engineer, broad work background in the nuclear power industry and in the overall electric utility business, currently involved in entrepreneurial development of niche electrical generating sources in California and Colorado]

So unemployment is rising in the US and the pace of economic growth has turned negative. Congress and Mr. Obama's first thoughts turn to Keynesian economics which prescribe an increase in governmental spending to "prime the pump." While the wisdom and efficacy of this course is still subject to debate, even after 80 years, it looks like there will be no stopping a huge federal stimulus package from Congress. What is open to debate is what form and direction should the stimulus take. Some argue for direct payments to consumers while other argue for governmental "investment" in useful infrastructure.¶ In US history, there are a couple of bright spots where government infrastructure investments have been unqualified successes. The classic case is New York State's Eire Canal, completed in 1825. Eisenhower's push for the Interstate Highway System during the 1950s is another textbook example. Both of these are transportation improvements that made movement of people and goods within the country both quicker and cheaper. They greatly increased economic productivity.¶ Another example of successful economic investment by government was in the initial development of commercial nuclear power. Even during World War II's Manhattan Project, scientists and engineers were eager to moonlight on the anticipated peaceful use of atomic energy and with peace, the newly formed Atomic Energy Commission got busy with a series of innovative reactor designs to make commercial electricity. The first nuclear "juice" was produced by 1951, lighting a string of four light bulbs. The eventual sorting-out of the unworkable and the impractical was largely complete by the early 1960s, primarily funded by the federal government. Eventual amendments to the Atomic Energy Act allowed privately held industrial companies and electric utilities to begin implementation of real nuclear power plants able to pay for themselves through the production and sale of electricity.¶ The first Arab Oil Crisis of 1972 was a tremendous stimulus to nuclear power. In 1970, 35% of US electricity was fueled by oil, increasingly imported and rapidly increasing in price and decreasing in security of supply. The first wave of commercial nuclear plants, along with construction of additional coal-burning plants, subsequently reduced our use of oil in electrical generation to about 2% today. These operating plants are doing well financially; Warren Buffett recently tried to buy several but lost out in bidding to a French company.¶ The US is poised for a second wave of new nuke construction. The principal regulator, the Nuclear Regulatory Commission, has been requested to schedule reviews for over 30 new reactors. The first new application showed up September, 2007, for two units in Texas with 24 others already in the hopper. Orders for long-lead hardware have been placed but actual site construction must await the myriad of government permits required.¶ Yet, it remains uncertain how many of these proposed plants will be built. The technical and commercial risks are well in hand since the basic technology is merely an evolution on the tried-and-true. Most of the proposed reactors are to be built on sites that already have operating reactors on them so environmental surprises should be rare. What concerns investors are the legal and political risks. The most notorious past example was when county officials in a single Long Island county effectively wiped out $6 billion of private investment by refusing to participate in an evacuation drill for the Shoreham nuke in the 1980s. The company went bankrupt and sold the whole utility to the state of New York for $1.¶ In 2005, Congress proposed to mitigate those external risks that nuclear investors face by offering an insurance pool against frivolous lawsuits, changing rules, and local political intransigence. Writing these regulations for the pool grants has seemed to take forever and in any case is too little and almost too late. Designed for a few "bleeding edge" pioneers, the tentative few have become a mad rush, swamping the original allocation of insurance funds.¶ But our political leaders are now casting about for a quick economic stimulus for the economy. They want a way to create jobs NOW, hopefully doing something productive. One risk is that, like the last stimulus package, Congress will give in to the temptation to play Santa Claus in February, mailing out checks to everyone. Exactly how that's supposed to help the economy remains unclear.¶ Instead, I propose that Congress bankroll immediate construction of a dozen new nuclear reactors at existing nuke sites. This meets the common concern that infrastructure projects be "shovel-ready." Starting with existing nuclear power plant sites minimizes risk of undiscovered environmental issues. Local political acceptance is usually well resolved after years of "good neighbor" operation, not to mention the millions of dollars annually that flows into the local economy and government treasuries.¶ While fabrication of long-lead components may eventually constrain the startup schedule, we could start the massive work of digging the foundations and laying the concrete and reinforcing steel that is so much of nuclear construction. With a bit of tweaking of current regulations on "limited work authorizations", those plants that have turned in applications to the NRC of acceptable quality could start "turning dirt" within a couple months. Congress could mandate the early construction rule changes and guarantee the job-creating funds committed. Actual startup of the reactors would still require detailed inspections and tests by the NRC, but that is, at best, a few years off. Since current requirements effectively prohibit construction until after the application is approved, this proposal would shave off years of delay in the operation of an expanded nuclear fleet. Plus, it would put price pressure on any proposed new coal plants and surely reduce coal's future market share, if that be the new Administration's policy goal.¶ So what's the worst that could happen should a project run into difficulties down the road? The government would have paid some guys to dig a hole. Then they would have to pay some more guys to fill it in. This plan just defaults to regular government work.

#### Double-dip recession now – immediately stimulating the economy key to solve

**Cox 12** [Jeff Cox, CNBC, Alaska Dispatch, ¶ “Companies reluctant to spend money, fearing double-dip recession”¶ Jeff Cox, CNBC | GlobalPost.com | Oct 25, 2012]

Amid a lackluster earning season that has featured many companies missing sales expectations, cash balances have swelled 14 percent and are on track toward $1.5 trillion for the Standard & Poor's 500, according to JPMorgan. Both levels would be historic highs.¶ ¶ The buildup contrasts with an earnings picture in which 61 percent of the 127 companies that reported through last week have missed revenue expectations though more than half have beaten estimates.¶ ¶ With unemployment mired at 7.8 percent, economic growth at 1.3 percent and the stock market getting no lift from earnings, the larger question is when companies will start putting that money to work. (Read More: What the Jobs Report Really Says About the Economy)¶ ¶ "Companies aren't making the capital investments because they don't see the growth to make the investment," said Jim Paulsen, chief market strategist at Wells Capital Management in Minneapolis. "They're not making long-term investments without a feel for sales growth. That's what's got to come."¶ ¶ Since the 2008 financial crisis, investors had been content to watch companies use government stimulus to build up liquidity in case the economy should double-dip back into recession. But with the S&P 500 breaching important support levels and an economy hungry for a growth engine, it's only a matter of time before that patience wears thin.¶ ¶ "It's going to take on more significance for investors. They're going to get more and more upset about sitting on hoards of cash. You may be hearing more activist investor calls," Paulsen said.¶ ¶ "People are getting less concerned about financial risks and more concerned about growth," he added. "If you're not going to grow, at least pay it back in returns. It's going to go from a badge of honor (for accumulating cash) to representation of poor management."¶ ¶

#### Double-dip risks nuclear war

**Fordham 10**

[Tina Fordham, “Investors can’t ignore the rise of geopolitical risk”, Financial Times, 7-17-2010, <http://www.ft.com/cms/s/0/dc71f272-7a14-11df-9871-00144feabdc0.html>]

Geopolitical risk is on the rise after years of relative quiet – potentially creating further headwinds to the global recovery just as fears of a double-dip recession are growing, says Tina Fordham, senior political analyst at Citi Private Bank. “Recently, markets have been focused on problems within the eurozone and not much moved by developments in North Korea, new Iran sanctions, tensions between Turkey and Israel or the unrest in strategically significant Kyrgyzstan,” she says. “But taken together, we don’t think investors can afford to ignore the return of geopolitical concerns to the fragile post-financial crisis environment.” Ms Fordham argues the end of post-Cold War US pre-eminence is one of the most important by-products of the financial crisis. “The post-crisis world order is shifting. More players than ever are at the table, and their interests often diverge. Emerging market countries have greater weight in the system, yet many lack experience on the global stage. Addressing the world’s challenges in this more crowded environment will be slower and more complex. This increases the potential for proliferating risks: most notably the prospect of politically and/or economically weakened regimes obtaining nuclear weapons; and military action to keep them from doing so. “Left unresolved, these challenges could disrupt global stability and trade. This would be a very unwelcome time to see the return of geopolitical risk.”

#### Moreover, Expanding nuclear power is key to price stability -- prevents economic collapse.

Bowman, ‘6

[Frank, President and CEO -- Nuclear Energy Institute, Speech to House of Representatives, Subcommittee on Energy and Water Development, 9-3, http://nei.org/newsandevents/speechesandtestimony/2006/bowmantestimony91306extended]

The Strategic Value of Nuclear Power: Platform for the Future Any discussion of the future of nuclear energy must begin with a factual understanding of the status of nuclear energy in the United States today. The operating performance and strategic value of America’s 103 operating nuclear power plants is the platform from which the next generation of nuclear power will be launched. Nuclear power represents 20 percent of U.S. electricity supply today—precisely the same percentage as 10 years ago, even though there are six fewer reactors than a decade ago and even though total U.S. electricity supply has increased by 25 percent in that period. Nuclear power has maintained its market share thanks to dramatic improvements in the reliability, safety, productivity and management of U.S. nuclear plants. On average, U.S. nuclear plants operate at around 90 percent capacity factors, year in and year out—the highest level of any form of electricity generation. Improved productivity at our nuclear plants satisfied 20 percent of the growth in electricity demand over the last decade. Nuclear power serves a number of important national needs. First, nuclear power plants contribute to the fuel and technology diversity that is the core strength of the U.S. electric supply system. This diversity is at risk because today’s business environment and market conditions in the electric sector do not encourage investment in large, new capital-intensive technologies, particularly the advanced nuclear power plants and advanced coal-fired power plants best-suited to supply baseload electricity. Second, nuclear power plants provide future price stability that is not available from electric generating plants fueled with natural gas. More than 90 percent of all new electric generating capacity added over the past five years is fueled with natural gas. Natural gas has many desirable characteristics and should be part of our fuel mix, but over-reliance on any one fuel source leaves consumers vulnerable to price volatility and supply disruptions. Volatility in natural gas prices over the last several years is likely to continue, thanks partly to unsustainable demand for natural gas from the electric sector. This volatility subjects the U.S. economy to potential damage. Because the operating costs of nuclear power plants are stable, they dampen price volatility in the electricity and natural gas markets. Nuclear power plants also reduce the pressure on natural gas supply, thereby relieving cost pressures on other users of natural gas that have no alternative fuel source.

#### Decline causes global war

Royal 10 – Jedediah Royal, Director of Cooperative Threat Reduction at the U.S. Department of Defense, 2010, “Economic Integration, Economic Signaling and the Problem of Economic Crises,” in Economics of War and Peace: Economic, Legal and Political Perspectives, ed. Goldsmith and Brauer, p. 213-214

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defence behaviour of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson’s (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crises could usher in a redistribution of relative power (see also Gilpin, 10981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Fearon, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner, 1999). Seperately, Polllins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium, and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland’s (1996,2000) theory of trade expectations suggests that ‘future expectation of trade’ is a significant variable in understanding economic conditions and security behavior of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectation of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases , as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states. Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession tends to amplify the extent to which international and external conflicts self-reinforce each other. (Blomberg & Hess, 2002, p.89). Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. ‘Diversionary theory’ suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to create a ‘rally round the flag’ effect. Wang (1996), DeRouen (1995), and Blomberg, Hess and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997) Miller (1999) and Kisanganie and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak presidential popularity, are statistically linked to an increase in the use of force.

### Warming Adv

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise

**Prothero 12** [Donald R. Prothero, Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, "How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO]

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### Causes extinction

Sawin 12 [Janet Sawin, Senior Director of the Energy and Climate Change Program at the WorldWatch Institute, Aug 2012, “Climate Change Poses Greater Security Threat than Terrorism]

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources.

#### The IFR is the only way to reduce coal emissions sufficiently to avert the worst climate disasters

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "Why We Should Build an Integral Fast Reactor Now," 11/25/9) http://skirsch.wordpress.com/2009/11/25/ifr/

To prevent a climate disaster, we must eliminate virtually all coal plant emissions worldwide in 25 years. The best way and, for all practical purposes, the only way to get all countries off of coal is not with coercion; it is to make them want to replace their coal burners by giving them a plug-compatible technology that is less expensive. The IFR can do this. It is plug-compatible with the burners in a coal plant (see Nuclear Power: Going Fast). No other technology can upgrade a coal plant so it is greenhouse gas free while reducing operating costs at the same time. In fact, no other technology can achieve either of these goals. The IFR can achieve both.¶ The bottom line is that without the IFR (or a yet-to-be-invented technology with similar ability to replace the coal burner with a cheaper alternative), it is unlikely that we’ll be able to keep CO2 under 450 ppm.¶ Today, the IFR is the only technology with the potential to displace the coal burner. That is why restarting the IFR is so critical and why Jim Hansen has listed it as one of the top five things we must do to avert a climate disaster.[4]¶ Without eliminating virtually all coal emissions by 2030, the sum total of all of our other climate mitigation efforts will be inconsequential. Hansen often refers to the near complete phase-out of carbon emissions from coal plants worldwide by 2030 as the sine qua non for climate stabilization (see for example, the top of page 6 in his August 4, 2008 trip report).¶ To stay under 450ppm, we would have to install about 13,000 GWe of new carbon-free power over the next 25 years. That number was calculated by Nathan Lewis of Caltech for the Atlantic, but others such as Saul Griffith have independently derived a very similar number and White House Science Advisor John Holdren used 5,600 GWe to 7,200 GWe in his presentation to the Energy Bar Association Annual Meeting on April 23, 2009. That means that if we want to save the planet, we must install more than 1 GWe per day of clean power every single day for the next 25 years. That is a very, very tough goal. It is equivalent to building one large nuclear reactor per day, or 1,500 huge wind turbines per day, or 80,000 37 foot diameter solar dishes covering 100 square miles every day, or some linear combination of these or other carbon free power generation technologies. Note that the required rate is actually higher than this because Hansen and Rajendra Pachauri, the chair of the IPCC, now both agree that 350ppm is a more realistic “not to exceed” number (and we’ve already exceeded it).¶ Today, we are nowhere close to that installation rate with renewables alone. For example, in 2008, the average power delivered by solar worldwide was only 2 GWe (which is to be distinguished from the peak solar capacity of 13.4GWe). That is why every renewable expert at the 2009 Aspen Institute Environment Forum agreed that nuclear must be part of the solution. Al Gore also acknowledges that nuclear must play an important role.¶ Nuclear has always been the world’s largest source of carbon free power. In the US, for example, even though we haven’t built a new nuclear plant in the US for 30 years, nuclear still supplies 70% of our clean power!¶ Nuclear can be installed very rapidly; much more rapidly than renewables. For example, about two thirds of the currently operating 440 reactors around the world came online during a 10 year period between 1980 and 1990. So our best chance of meeting the required installation of new power goal and saving the planet is with an aggressive nuclear program.¶ Unlike renewables, nuclear generates base load power, reliably, regardless of weather. Nuclear also uses very little land area. It does not require the installation of new power lines since it can be installed where the power is needed. However, even with a very aggressive plan involving nuclear, it will still be extremely difficult to install clean power fast enough.¶ Unfortunately, even in the US, we have no plan to install the clean power we need fast enough to save the planet. Even if every country were to agree tomorrow to completely eliminate their coal plant emissions by 2030, how do we think they are actually going to achieve that? There is no White House plan that explains this. There is no DOE plan. There is no plan or strategy. The deadlines will come and go and most countries will profusely apologize for not meeting their goals, just like we have with most of the signers of the Kyoto Protocol today. Apologies are nice, but they will not restore the environment.¶ We need a strategy that is believable, practical, and affordable for countries to adopt. The IFR offers our best hope of being a centerpiece in such a strategy because it the only technology we know of that can provide an economically compelling reason to change.¶ At a speech at MIT on October 23, 2009, President Obama said “And that’s why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. … The nation that wins this competition will be the nation that leads the global economy. I am convinced of that. And I want America to be that nation, it’s that simple.”¶ Nuclear is our best clean power technology and the IFR is our best nuclear technology. The Gen IV International Forum (GIF) did a study in 2001-2002 of 19 different reactor designs on 15 different criteria and 24 metrics. The IFR ranked #1 overall. Over 242 experts from around the world participated in the study. It was the most comprehensive evaluation of competitive nuclear designs ever done. Top DOE nuclear management ignored the study because it didn’t endorse the design the Bush administration wanted.¶ The IFR has been sitting on the shelf for 15 years and the DOE currently has no plans to change that.¶ How does the US expect to be a leader in clean energy by ignoring our best nuclear technology? Nobody I’ve talked to has been able to answer that question.¶ We have the technology (it was running for 30 years before we were ordered to tear it down). And we have the money: The Recovery Act has $80 billion dollars. Why aren’t we building a demo plant?¶ IFRs are better than conventional nuclear in every dimension. Here are a few:¶ Efficiency: IFRs are over 100 times more efficient than conventional nuclear. It extracts nearly 100% of the energy from nuclear material. Today’s nuclear reactors extract less than 1%. So you need only 1 ton of actinides each year to feed an IFR (we can use existing nuclear waste for this), whereas you need 100 tons of freshly mined uranium each year to extract enough material to feed a conventional nuclear plant.¶ Unlimited power forever: IFRs can use virtually any actinide for fuel. Fast reactors with reprocessing are so efficient that even if we restrict ourselves to just our existing uranium resources, we can power the entire planet forever (the Sun will consume the Earth before we run out of material to fuel fast reactors). If we limited ourselves to using just our DU “waste” currently in storage, then using the IFR we can power the US for over 1,500 years without doing any new mining of uranium.[5]¶ Exploits our largest energy resource: In the US, there is 10 times as much energy in the depleted uranium (DU) that is just sitting there as there is coal in the ground. This DU waste is our largest natural energy resource…but only if we have fast reactors. Otherwise, it is just waste. With fast reactors, virtually all our nuclear waste (from nuclear power plants, leftover from enrichment, and from decommissioned nuclear weapons)[6] becomes an energy asset worth about $30 trillion dollars…that’s not a typo…$30 trillion, not billion.[7] An 11 year old child was able to determine this from publicly available information in 2004.

#### Alternative methods can’t solve warming

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "How Does Obama Expect to Solve the Climate Crisis Without a Plan?" 7/16/9) <http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html-http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html>

The ship is sinking slowly and we are quickly running out of time to develop and implement any such plan if we are to have any hope of saving the planet. What we need is a plan we can all believe in. A plan where our country's smartest people all nod their heads in agreement and say, "Yes, this is a solid, viable plan for keeping CO2 levels from touching 425ppm and averting a global climate catastrophe."¶ ¶ At his Senate testimony a few days ago, noted climate scientist James Hansen made it crystal clear once again that the only way to avert an irreversible climate meltdown and save the planet is to phase out virtually all coal plants worldwide over a 20 year period from 2010 to 2030. Indeed, if we don't virtually eliminate the use of coal worldwide, everything else we do will be as effective as re-arranging deck chairs on the Titanic.¶ ¶ Plans that won't work¶ ¶ Unfortunately, nobody has proposed a realistic and practical plan to eliminate coal use worldwide or anywhere close to that. There is no White House URL with such a plan. No environmental group has a workable plan either.¶ ¶ Hoping that everyone will abandon their coal plants and replace them with a renewable power mix isn't a viable strategy -- we've proven that in the U.S. Heck, even if the Waxman-Markey bill passes Congress (a big "if"), it is so weak that it won't do much at all to eliminate coal plants. So even though we have Democrats controlling all three branches of government, it is almost impossible to get even a weak climate bill passed.¶ ¶ If we can't pass strong climate legislation in the U.S. with all the stars aligned, how can we expect anyone else to do it? So expecting all countries to pass a 100% renewable portfolio standard (which is far far beyond that contemplated in the current energy bill) just isn't possible. Secondly, even if you could mandate it politically in every country, from a practical standpoint, you'd never be able to implement it in time. And there are lots of experts in this country, including Secretary Chu, who say it's impossible without nuclear (a point which I am strongly in agreement with).¶ ¶ Hoping that everyone will spontaneously adopt carbon capture and sequestration (CCS) is also a non-starter solution. First of all, CCS doesn't exist at commercial scale. Secondly, even if we could make it work at scale, and even it could be magically retrofitted on every coal plant (which we don't know how to do), it would require all countries to agree to add about 30% in extra cost for no perceivable benefit. At the recent G8 conference, India and China have made it clear yet again that they aren't going to agree to emission goals.¶ ¶ Saying that we'll invent some magical new technology that will rescue us at the last minute is a bad solution. That's at best a poor contingency plan.¶ ¶ The point is this: It should be apparent to us that we aren't going to be able to solve the climate crisis by either "force" (economic coercion or legislation) or by international agreement. And relying on technologies like CCS that may never work is a really bad idea.¶ ¶ The only remaining way to solve the crisis is to make it economically irresistible for countries to "do the right thing." The best way to do that is to give the world a way to generate electric power that is economically more attractive than coal with the same benefits as coal (compact power plants, 24x7 generation, can be sited almost anywhere, etc). Even better is if the new technology can simply replace the existing burner in a coal plant. That way, they'll want to switch. No coercion is required.

### ANL Adv

#### Argonne National Lab has a severe shortfall of quality scientists now – the best and brightest aren’t replacing retirees

Grossenbacher 08[CQ Congressional Testimony, April 23, 2008, John, Laboratory Director Idaho National Laboratory, “NUCLEAR POWER,” SECTION: CAPITOL HILL HEARING TESTIMONY, Statement of John J. Grossenbacher Laboratory Director Idaho National Laboratory, Committee on House Science and Technology, Lexis]

While all of the programs I've highlighted for you individually and collectively do much to advance the state of the art in nuclear science and technology, and enable the continued global expansion of nuclear power, there is a great area of challenge confronting nuclear energy's future. As with most other technologically intensive U.S. industries - it has to do with human capital and sustaining critical science and technology infrastructure. My laboratory, its fellow labs and the commercial nuclear power sector all face a troubling reality - a significant portion of our work force is nearing retirement age and the pipeline of qualified potential replacements is not sufficiently full. Since I'm well aware of this committee's interests in science education, I'd like to update you on what the Department and its labs are doing to inspire our next generation of nuclear scientists, engineers and technicians. Fundamentally, the Office of Nuclear Energy has made the decision to invite direct university partnership in the shared execution of all its R&D programs and will set aside a significant amount of its funds for that purpose. Already, nuclear science and engineering programs at U.S. universities are involved in the Office of Nuclear Energy's R&D, but this move will enable and encourage even greater participation in DOE's nuclear R&D programs. In addition, all NE-supported labs annually bring hundreds of our nation's best and brightest undergraduate and graduate students on as interns or through other mechanisms to conduct real research. For example, at INL we offer internships, fellowships, joint faculty appointments and summer workshops that focus on specific research topics or issues that pertain to maintaining a qualified workforce. This year, we are offering a fuels and materials workshop for researchers and a 10-week training course for engineers interested in the field of reactor operations. Last year, DOE designated INL's Advanced Test Reactor as a national scientific user facility, enabling us to open the facility to greater use by universities and industry and to supporting more educational opportunities. ATR is a unique test reactor that offers the ability to test fuels and materials in nine different prototypic environments operated simultaneously. With this initiative, we join other national labs such as Argonne National Laboratory and Oak Ridge National Laboratory in offering nuclear science and engineering assets to universities, industry and the broader nuclear energy research community. Finally, national laboratories face their own set of challenges in sustaining nuclear science and technology infrastructure - the test reactors, hot cells, accelerators, laboratories and other research facilities that were developed largely in support of prior missions. To obtain a more complete understanding of the status of these assets, the Office of Nuclear Energy commissioned a review by Battelle to examine the nuclear science and technology infrastructure at the national laboratories and report back later this year on findings and recommendations on a strategy for future resource allocation that will enable a balanced, yet sufficient approach to future investment in infrastructure.

#### The plan attracts the best and brightest back to Argonne – successful demonstration of IFR spurs collaborative nuclear interdisciplinary research

Blees 8 [Tom Blees 2008 “Prescription for the Planet: The painless remedy for our energy and environmental crises” Pg. 367]

21. Restart nuclear power development research at national labs like Argonne, concentrating on small reactor designs like the nuclear battery ideas discussed earlier. Given the cost and difficulty of extending power grids over millions of square miles of developing countries, the advantages of distributed generation in transforming the energy environment of such countries can hardly be exaggerated. It is a great pity that many of the physicists and engineers who were scattered when the Argonne IFR project was peremptorily terminated chose to retire. Rebuilding that brain trust should be, well, a no-brainer. If one but looks at the incredible challenges those talented people were able to meet, it seems perfectly reasonable to suppose that a focus on small sealed reactor development could likewise result in similar success. Some of those working on the AHTR and other seemingly unneeded projects could well transition to R&D that fits into the new paradigm. Japanese companies are already eager to build nuclear batteries, and there should be every effort to work in concert with them and other researchers as we develop these new technologies. The options this sort of collaborative research would open up for the many varied types of energy needs around the world would be incalculable.

#### Attracting leading scientists to Argonne key to successful development of the Advanced Photon Source

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Scientific Community¶ An enhanced catalyst research beamline with capabilities for in situ XAFS, powder¶ diffraction, and kinetics measurements would benefit the entire catalysis community,¶ i.e., government research laboratories, academia, and industry. The beamline and its¶ staff would also serve as a focal point for expanding catalyst research to other APS¶ beamlines using advanced techniques not routinely applied to catalyst systems, e.g.,¶ SAXS, XES, RIXS, and HERF spectroscopy. Development of these latter methods¶ would position the APS as a leader in this area and attract leading scientists from all¶ over the world. It is expected that new users would initially characterize their materials and identify appropriate systems for specialized techniques.¶ Fig. 4. Cell for in situ x-ray absorption studies of fuel cell¶ catalysts. Standard Fuel Cell Technologies cell hardware¶ was machined to allow x-ray fluorescence studies of cathode electrocatalysts in an operating membrane-electrode¶ assembly (fuel cell). (Argonne National Laboratory photograph)Throughout the U.S. and the world, there are countless research groups working to¶ develop the enabling material in fuel cell catalysis: an oxygen reduction electrocatalyst that is less expensive and more durable than platinum [36-38]. A few of these¶ groups utilize synchrotron-based x-ray techniques to characterize their electrocatalysts; however, these studies are almost exclusively in environments mimicking the¶ reactive environment or are ex situ. A notable exception is the catalyst development¶ effort being led by Los Alamos National Laboratory, which encompasses many approaches and involves many university and national laboratories. As part of this project, Argonne researchers have developed the capability to characterize catalysts¶ containing low-atomic-number elements in an operating fuel cell using XAFS at the¶ APS. Utilizing this cell (Fig. 4), Argonne scientists have determined the active site in¶ a cobalt-containing catalyst. This capability would be extremely useful to other catalyst development teams around the country and the world, and it is envisioned that a¶ dedicated APS electrocatalysis beamline could be designed and made available to¶ these teams. The neutron source at the National Institute of Standards and Technology (NIST) has a beamline dedicated to studies of water transport in fuel cells, which¶ has provided invaluable information for fuel cell materials design. The APS beamline¶ would be the catalyst counterpart to the NIST beamline.¶ A molecular-level understanding of the interactions and correlations that occur in solution and between solution phases is essential to building a predictive capability of a¶ metal ion’s solubility, reactivity, kinetics, and energetics. Until the recent availability¶ of tunable, high-energy x-rays this understanding has been significantly limited by¶ the absence of structural probes. The APS, with its high flux of high-energy x-rays, is¶ the ideal synchrotron source to provide this new information, which is critical to the¶ advancement of solution chemistry. The utility of high-energy x-rays is currently¶ being demonstrated as part of an APS Partner User Proposal (PUP-52), and has received high visibility, including an Inorganic Chemistry feature cover [34]. This effort¶ is interesting a cadre of solution chemists that, to date, have not been part of the user¶ base at synchrotron facilities. The extension of high-energy capabilities from simple¶ PDF experiments to more complex liquid-liquid interfaces is expected to significantly¶ broaden this new interest group into areas including soft-matter studies.

#### APS key to safe nanotech development

**Lindsey 12** [“Scientist Uses Advance Photon Source to Study Nano-Scale Materials”, Laura, Director of Communications and Marketing, The College of Arts and Science, ¶ University of Missouri Columbia, Department of Physics and Astronomy, Jan 25, 2012]

Emerging new technologies utilize advanced materials that are assembled on exceedingly small scales of length. Because of their small size, these nano-scale materials often exhibit unique properties that can potentially be harnessed for applications and new science. In order to do this however, one needs a comprehensive understanding and characterization of their physical behavior on the atomic scale. Professor Paul Miceli is doing just that with the Advanced Photon Source (APS) at Argonne National Laboratory in Argonne, Ill. The APS is the brightest source of x-rays in North America. This machine, which is one kilometer in circumference, allows scientists to collect data with unprecedented detail and in short time frames.¶ “The Advanced Photon Source’s x-ray beam is a billion times more intense than what I can see in my lab,” says Miceli.¶ He deposits thin layers, typically one atom thick, onto a surface from a vapor and then studies the structures by scattering the intense x-ray beam. By doing this, Miceli can determine how the atoms rearrange themselves on the surface so he can develop a better understanding of how nano-structures grow. Because of the unprecedented brightness of the x-ray beam, he is able to observe the materials as they grow in real time. In addition to the unique aspect of the x-ray beam, these studies are facilitated by an extensive ultra-high-vacuum growth-and-analysis chamber residing at the APS that was designed and developed by Miceli.¶ “My findings pertain to basic science about how atoms organize themselves,” says Miceli.¶ Because the x-ray beam can probe both the surface and the subsurface of the materials, Miceli’s research has made discoveries that could not be achieved by other techniques. For example, his research found that nano-clusters of missing atoms become incorporated into metallic crystals as they grow. This discovery is important because it brings new insight to theories of crystal growth, and it forces scientists to think about how atomic-scale mechanisms might lead to the missing atoms**.** Such effects, which also have practical implications for technological applications of nano-materials, have not been considered in current theories.¶ Other studies by Miceli have shown that the growth of some metallic nano-crystals cannot be explained by conventional theories of crystal growth. For example, quantum-mechanical effects on the conduction electrons in very small nano-crystals can change the energy of the crystal, and Miceli showed that the statistical mechanics of coarsening — when large crystals become larger while small crystals get smaller and vanish — does not follow the conventional theories that have worked successfully in materials science over the past 50 years. In fact, he has found that atoms can move over metallic nano-crystalline surfaces thousands of times faster than normal crystals, illustrating the many surprises and challenges that nano-scale materials present to scientists.

#### Nanotech is inevitable – information generation facilitates safe stewardship that prevents grey goo

**Treder and Phoenix 3** [PUBLISHED JANUARY 2003 — REVISED DECEMBER 2003, “Safe Utilization of Advanced Nanotechnology”, Chris Phoenix and Mike Treder, Mike Treder, Executive Director of CRN, BS Biology, University of Washington, Research Fellow with the Institute for Ethics and Emerging Technologies, a consultant to the Millennium Project of the American Council for the United Nations University and to the Future Technologies Advisory Group, serves on the Nanotech Briefs Editorial Advisory Board, is a member of the New York Academy of Sciences and a member of the World Future Society. AND Chris Phoenix, CRN’s Director of Research, has studied nanotechnology for more than 15 years. BS, Symbolic Systems, MS, Computer Science, Stanford University]

Many words have been written about the dangers of advanced nanotechnology. Most of the threatening scenarios involve tiny manufacturing systems that run amok, or are used to create destructive products. A manufacturing infrastructure built around a centrally controlled, relatively large, self-contained manufacturing system would avoid these problems. A controlled nanofactory would pose no inherent danger, and it could be deployed and used widely. Cheap, clean, convenient, on-site manufacturing would be possible without the risks associated with uncontrolled nanotech fabrication or excessive regulation. Control of the products could be administered by a central authority; intellectual property rights could be respected. In addition, restricted design software could allow unrestricted innovation while limiting the capabilities of the final products. The proposed solution appears to preserve the benefits of advanced nanotechnology while minimizing the most serious risks.¶ Advanced Nanotechnology And Its Risks¶ As early as 1959, Richard Feynman proposed building devices with each atom precisely placed1. In 1986, Eric Drexler published an influential book, Engines of Creation2, in which he described some of the benefits and risks of such a capability. If molecules and devices can be manufactured by joining individual atoms under computer control, it will be possible to build structures out of diamond, 100 times as strong as steel; to build computers smaller than a bacterium; and to build assemblers and mini-factories of various sizes, capable of making complex products and even of duplicating themselves.¶ Drexler's subsequent book, Nanosystems3, substantiated these remarkable claims, and added still more. A self-contained tabletop factory could produce its duplicate in one hour. Devices with moving parts could be incredibly efficient. Molecular manufacturing operations could be carried out with failure rates less than one in a quadrillion. A computer would require a miniscule fraction of a watt and one trillion of them could fit into a cubic centimeter. Nanotechnology-built fractal plumbing would be able to cool the resulting 10,000 watts of waste heat. It seems clear that if advanced nanotechnology is ever developed, its products will be incredibly powerful.¶ As soon as molecular manufacturing was proposed, risks associated with it began to be identified. Engines of Creation2 described one hazard now considered unlikely, but still possible: grey goo. A small nanomachine capable of replication could in theory copy itself too many times4. If it were capable of surviving outdoors, and of using biomass as raw material, it could severely damage the environment5. Others have analyzed the likelihood of an unstable arms race6, and many have suggested economic upheaval resulting from the widespread use of free manufacturing7. Some have even suggested that the entire basis of the economy would change, and money would become obsolete8.¶ Sufficiently powerful products would allow malevolent people, either hostile governments or angry individuals, to wreak havoc. Destructive nanomachines could do immense damage to unprotected people and objects. If the wrong people gained the ability to manufacture any desired product, they could rule the world, or cause massive destruction in the attempt9. Certain products, such as vast surveillance networks, powerful aerospace weapons, and microscopic antipersonnel devices, provide special cause for concern. Grey goo is relevant here as well: an effective means of sabotage would be to release a hard-to-detect robot that continued to manufacture copies of itself by destroying its surroundings.¶ Clearly, the unrestricted availability of advanced nanotechnology poses grave risks, which may well outweigh the benefits of clean, cheap, convenient, self-contained manufacturing. As analyzed in Forward to the Future: Nanotechnology and Regulatory Policy10, some restriction is likely to be necessary. However, as was also pointed out in that study, an excess of restriction will enable the same problems by increasing the incentive for covert development of advanced nanotechnology. That paper considered regulation on a one-dimensional spectrum, from full relinquishment to complete lack of restriction. As will be shown below, a two-dimensional understanding of the problem—taking into account both control of nanotech manufacturing capability and control of its products—allows targeted restrictions to be applied, minimizing the most serious risks while preserving the potential benefits.

#### Extinction in 72 hours

Mark Pesce, BS Candidate at MIT, October, 1999, “Thinking Small,” FEED Magazine, http://hyperreal.org/~mpesce/ThinkingSmall.html

The nanoassembler is the Holy Grail of nanotechnology; once a perfected nanoassembler is available, almost anything becomes possible – which is both the greatest hope and biggest fear of the nanotechnology community. Sixty years ago, John Von Neumann – who, along with Alan Turing founded the field of computer science – surmised that it would someday be possible to create machines that could copy themselves, a sort of auto-duplication which could lead from a single instance to a whole society of perfect copies. Although such a Von Neumann machine is relatively simple in theory, such a device has never been made – because it’s far easier, at the macromolecular scale, to build a copy of a machine than it is to get the machine to copy itself. At the molecular level, this balance is reversed; it’s far easier to get a nanomachine to copy itself than it is to create another one from scratch. This is an enormous boon – once you have a single nanoassembler you can make as many as you might need – but it also means that a nanoassembler is the perfect plague. If – either intentionally or through accident – a nanoassembler were released into the environment, with only the instruction to be fruitful and multiply, the entire surface of the planet – plants, animals and even rocks - would be reduced to a “gray goo” of such nanites in little more than 72 hours. This “gray goo problem”, well known in nanotechnology acts as a check against the unbounded optimism which permeates scientific developments in atomic-scale devices. Drexler believes the gray goo problem mostly imaginary, but does admit the possibility of a “gray dust” scenario, in which replicating nanites “smother” the Earth in a blanket of sub-microscopic forms. In either scenario, the outcome is much the same. And here we encounter a technological danger unprecedented in history: If we had stupidly blown ourselves to kingdom come in a nuclear apocalypse, at least the cockroaches would have survived. But in a gray goo scenario, nothing – not even the bacteria deep underneath the ground – would be untouched. Everything would become one thing: a monoculture of nanites.

### Solvency

#### Contention 4: Solvency

#### Current loan guarantees aren’t enough – more on new reactor types are key to catalyze nuclear construction and solve nuclear leadership

**Belogolova 12** [National Journal Daily, July 19, 2012, “U.S. Nuclear Industry Seen Needing a Boost”, Olga Belogolova, lexis, khirn]

A robust nuclear-energy industry should be a high priority for the country's energy and national-security policy given the importance of the sector to global nonproliferation, according to a new report released on Thursday by the Bipartisan Policy Center's Nuclear Initiative . Specifically, the United States needs to lead in the licensing and development **of new reactors** and on safety reforms, management of spent nuclear fuel, the nuclear-export market, and research and development in the nuclear sector, according to the report led by former Sen. Pete Domenici, R-N.M., and former Energy Department Assistant Secretary for Nuclear Energy Warren (Pete) Miller. But leadership on nuclear issues could prove to be a challenge for the United States. Although the country has long led the charge on civilian nuclear power, the combination of a slowed electricity market, the lack of sweeping climate legislation, a natural-gas boom, and last year's Fukushima Daiichi nuclear accident in Japan have created obstacles for the development of new nuclear power in the United States in recent years. While the Nuclear Regulatory Commission this year has approved four new reactors for the Vogtle and Summer nuclear plants in Georgia and South Carolina, respectively, there are likely to only be a few more plants licensed in the United States in the near future. The story is very different on the international level. After Fukushima, countries such as Germany, Italy, Switzerland, and of course Japan have paused or slowed down their nuclear-energy development, but that hasn't stopped the rest of the world. Many other nations such as China, India, South Korea, and Russia have reaffirmed plans to expand their fleets of nuclear reactors, while some countries in the Middle East have even announced plans to develop nuclear energy for the first time. China alone, which has 26 new reactors under development, is expected to account for 40 percent of planned nuclear construction globally. The United States might be a leader now, accounting for nearly one-third of global nuclear generation, but it won't be long before others come out ahead of us, especially given how long it takes to construct new reactors, Domenici and Miller explained. "It will be increasingly difficult for the United States to maintain its technological leadership without some near-term domestic demand for new construction," they write in the report. In order to control the proliferation of nuclear weapons, the United States **needs to remain involved in everything** that happens to nuclear materials, from the export of nuclear fuel for energy use to the disposal of spent fuel. Given the global picture, Domenici and Miller suggest a shift in U.S. policies in order to ensure that the U.S. nuclear energy program is not stuck at a near-standstill. "Market signals alone are unlikely to result in a diverse fuel mix, so helping to maintain and improve a range of electricity supply options remains a role for federal policy," the two write in the report. "In particular, U.S. policy should be aimed at helping to preserve nuclear energy as an important technology option for near- or longer-term deployment." The vast shale-gas reserves in the United States and new technology to tap them will probably keep natural-gas prices low for the foreseeable future, making financing of more expensive nuclear power more difficult. **Federal loan guarantees have long been viewed as crucial to growing the nuclear industry**, but the Energy Department has dragged its feet on these conditional loans, especially after the bankruptcy of the federally funded solar firm Solyndra so much so that some companies have decided not to wait around and see what happens. Southern Company, which is building the first two new reactors to be approved in decades at its Vogtle nuclear plant in Georgia, on Thursday said that it is now considering doing so without federal support. The company had been waiting for an $8.33 billion loan guarantee to build the two new reactors, but Southern CEO Tom Fanning told Reuters on Thursday that talks with DOE were going slowly and they might not be willing to wait any longer.

#### Loan guarantees attract private capital – increases are key

**Peskoe 12** [Ari Peskoe, associate in the law firm of McDermott Will and Emery LLP and focuses his practice on regulatory, legislative, compliance, and transactional issues related to energy markets, 4-20-2012, "A Solution Looking For a Problem: Building More Nuclear Reactors after Vogtle," The Electricty Journal, vol 25 issue 3, Science Direct]

Given the checkered history of reactor construction projects,56 private lenders are understandably skittish about lending billions of dollars to develop a new reactor. Construction of the Vogtle and SCANA reactors will be a critical test, and significant cost overruns on these two projects could doom the prospects for construction of additional reactors. Even if the construction of Vogtle and SCANA are on budget, it will likely still be difficult for future project developers to raise enough debt financing without government support.57 Federal loan guarantees shift “a large part of the learning costs and construction risks” from private lenders to the federal government by ensuring that lenders receive payment in the event that the developer defaults on repayments.58 Appropriations for the guarantees authorized by the Energy Policy Act of 2005 will soon run out, so future guarantees will require congressional action.59¶ Loan guarantees cost the federal government little or nothing unless there is an event of default.60 Creating a long-term guarantee program would be entirely consistent with the government's historic role in accepting risks and liabilities of nuclear power. Although it has not been implemented effectively, the Nuclear Waste Policy Act (NWPA) of 1982 requires the DOE to transport nuclear waste from privately owned reactors to permanent government storage facilities.61 Concerned about a “cloud of bankruptcy” hanging over its operations,62 the nascent nuclear industry pushed Congress to pass the Price-Anderson Act in 1957, which indemnifies the industry against claims arising from a nuclear incident. Both the NWPA and the Price-Anderson Act socialize costs of nuclear energy. In the case of the NWPA, the industry pays the DOE a tenth of a penny for each kilowatt-hour of nuclear energy sold to fund waste disposal activities.63 The Price-Anderson Act also requires generators to contribute to a fund, but the federal treasury would likely cover much of the liabilities associate with a nuclear disaster.64

#### And, loan guarantees solve nuclear expansion – shows investors the government has skin in the game, and incentivizes quick agency approval

Adams 10—Publisher of Atomic insights Was in the Navy for 33 years Spent time at the Naval Academy Has experience designing and running small nuclear plants (Rod, Concrete Action to Follow Strongly Supportive Words On Building New Nuclear Power Plants, atomicinsights.com/2010/01/concrete-action-to-follow-strongly-supportive-words-on-building-new-nuclear-power-plants.html)

Loan guarantees are important to the nuclear industry because the currently available models are large, capital intensive projects that need a stable regulatory and financial environment. The projects can be financed because they will produce a regular stream of income that can service the debt and still provide a profit, but that is only true if the banks are assured that the government will not step in at an inopportune time to halt progress and slow down the revenue generation part of the project. Bankers do not forget history or losses very easily; they want to make sure that government decisions like those that halted Shoreham, Barnwell’s recycling facility or the Clinch River Breeder Reactor program are not going to be repeated this time around. For the multi-billion dollar projects being proposed, bankers demand the reassurance that comes when the government is officially supportive and has some “skin in the game” that makes frivolous bureaucratic decisions to erect barriers very expensive for the agency that makes that decision. I have reviewed the conditions established for the guarantee programs pretty carefully – at one time, my company ([Adams Atomic Engines, Inc.](http://www.atomicengines.com)) was considering filing an application. The loan conditions are strict and do a good job of protecting government interests. They were not appropriate for a tiny company, but I can see where a large company would have less trouble complying with the rules and conditions. The conditions do allow low or no cost intervention in the case of negligence or safety issues, but they put the government on the hook for delays that come from bad bureaucratic decision making.

#### Manhattan Project approach key to catalyze quick investment in IFRs – perception is non-unique, there is government investment now

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Q. If this is really so good, how come GE isn't building S-PRISM on their own nickel?¶ Nobody wants to risk it since it isn't a slam dunk. You don't get a reward if you solve global warming. And government funding doesn't seem to be so easy. DOE tried to get funding for GNEP (which included IFR technology) and got shot down (so far).¶ GE is a large conservative corporation. They already service a fleet of lightwater reactors, are building more of them around the world, and have the promise of yet more. It's hard enough in this country to move into new levels of reactor technology without trying to leapfrog straight into the 4th generation. Their 3rd generation ESBWR is in the 5th round of NRC certification, whereas the S-PRISM (a souped up and more developed version of the PRISM) isn't at the starting gate. These things take years at the glacial pace of the NRC, though of course if President Obama decided to go all Manhattan project on it we could most definitely get there quickly enough. If GE started pushing 4th generation breeder reactors, can you imagine the hue and cry from the antie groups? What's their incentive to do that? If they're convinced that ultimately we'll end up at 4th generation reactors anyway and they can make plenty of dough and keep a low profile just taking the go slow approach, don't you imagine that's exactly what they'll do? Besides, conceivably another country with whom we have nuclear technology sharing agreements might very well certify and build it before the NRC ever gets out of the starting gate, which would make it much easier for the eventual NRC certification. Q. If this is really so good, how come someone in government isn't trying to get it restarted?¶ The DOE is attempting to resuscitate fast-reactor technology, as part of the GNEP (Global Nuclear Energy Partnership) initiative. See¶ http://www.gnep.energy.gov/gnepPRs/gnepPR011007.html, and http://www.gnep.energy.gov/.¶ The IFR is one form of fast-reactor technology (metallic fuel with pyroprocessing), but there are others -- inferior, according to the IFR scientists. The important thing these days is to get the U.S. back into a leadership role in the development and management of nuclear power, recognizing that recycling in fast reactors is necessary if the long-lived waste is to be consumed, and if the full energy potential of the uranium is to be exploited. The GNEP would resuscitate fast-reactor technology in this country.

#### Plan is modeled internationally

**Blees et al** 11 (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) <http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/>

There are many compelling reasons to pursue the rapid demonstration of a full-scale IFR, as a lead-in to a subsequent global deployment of this technology within a relatively short time frame. Certainly the urgency of climate change can be a potent tool in winning over environmentalists to this idea. Yet political expediency—due to widespread skepticism of anthropogenic causes for climate change—suggests that the arguments for rolling out IFRs can be effectively tailored to their audience. Energy security—especially with favorable economics—is a primary interest of every nation.¶ The impressive safety features of new nuclear power plant designs should encourage a rapid uptick in construction without concern for the spent fuel they will produce, for all of it will quickly be used up once IFRs begin to be deployed. It is certainly manageable until that time. Burying spent fuel in non-retrievable geologic depositories should be avoided, since it represents a valuable clean energy resource that can last for centuries even if used on a grand scale.¶ Many countries are now beginning to pursue fast reactor technology without the cooperation of the United States, laboriously (and expensively) re-learning the lessons of what does and doesn’t work. If this continues, we will see a variety of different fast reactor designs, some of which will be less safe than others. Why are we forcing other nations to reinvent the wheel? Since the USA invested years of effort and billions of dollars to develop what is arguably the world’s safest and most efficient fast reactor system in the IFR, and since several nations have asked us to share this technology with them (Russia, China, South Korea, Japan, India), there is a golden opportunity here to develop a common goal—a standardized design, and a framework for international control of fast reactor technology and the fissile material that fuels them. This opportunity should be a top priority in the coming decade, if we are serious about replacing fossil fuels worldwide with sufficient pace to effectively mitigate climate change and other environmental and geopolitical crises of the 21st century.

#### IFR’s S-PRISM design is really safe

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

Metal Fuel: The Ultimate Safety Valve¶ One of the most important of the many superlatives of the IFR is its use of a metal fuel comprised of uranium, plutonium and zirconium, and the ingenious manner in which the Argonne team solved the problems of fuel expansion and fuel fabrication, as well as the potentially dangerous overheating scenario. Unlike the fuel fabrication of oxide-fueled reactors that requires the dimensions of the fuel pellets to be uniform to very exacting tolerances, the metal fuel for the IFR can be simply injected into molds and then cooled and inserted into metal tubes (cladding) with a great deal of dimensional tolerance, with a sodium bond filling any voids. If an accident situation occurs that would cause the core to overheat, such as a loss of coolant flow accident, the metal fuel itself will expand, causing neutron leakage to terminate the chain reaction, relying on nothing but the laws of physics.¶ The passive safety characteristics of the IFR were tested in EBR-II on April 3, 1986, against two of the most severe accident events postulated for nuclear power plants. The first test (the Loss of Flow Test) simulated a complete station blackout, so that power was lost to all cooling systems. The second test (the Loss of Heat Sink Test) simulated the loss of ability to remove heat from the plant by shutting off power to the secondary cooling system. In both of these tests, the normal safety systems were not allowed to function and the operators did not interfere. The tests were run with the reactor initially at full power.¶ In both tests, the passive safety features simply shut down the reactor with no damage. The fuel and coolant remained within safe temperature limits as the reactor quickly shut itself down in both cases. Relying only on passive characteristics, EBR-II smoothly returned to a safe condition without activation of any control rods and without action by the reactor operators. The same features responsible for this remarkable performance in EBR-II will be incorporated into the design of future IFR plants, regardless of how large they may be [xi].¶ While the IFR was under development, a consortium of prominent American companies led by General Electric collaborated with the IFR team to design a commercial-scale reactor based upon the EBR-II research. This design, currently in the hands of GE, is called the PRISM (Power Reactor Innovative Small Module). A somewhat larger version (with a power rating of 380 MWe) is called the S-PRISM. As with all new nuclear reactor designs (and many other potentially hazardous industrial projects), probabilistic risk assessment studies were conducted for the S-PRISM. Among other parameters, the PRA study estimated the frequency with which one could expect a core meltdown. This occurrence was so statistically improbable as to defy imagination. Of course such a number must be divided by the number of reactors in service in order to convey the actual frequency of a hypothetical meltdown. Even so, if one posits that all the energy humanity requires were to be supplies solely by IFRs (an unlikely scenario but one that is entirely possible), the world could expect a core meltdown about once every 435,000 years [xii]. Even if the risk assessment understated the odds by a factor of a thousand, this would still be a reactor design that even the most paranoid could feel good about.

## 2ac

### Warming Adv

#### We can build them really quickly

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

How Fast Can We Build Them?¶ During France’s nuclear building boom they built an average of six nuclear power plants per year, culminating in a situation that provides them with about 80% of their electrical needs while making electricity their fourth-largest export earner. Gross Domestic Product (GDP) can be used as a rough guide to what a given country can financially bear for such a project, keeping in mind that France proceeded without the sense of urgency that the world today should certainly be ready to muster. There are six countries with higher GDPs than France, all of whom already possess the technology to build fast reactors: USA, China, Japan, India (they’re building one now), Germany, and the United Kingdom. Add Canada and Russia (which already has a commercial fast reactor running and is planning more), then tally up the GDP of these eight countries. At the rate of 6 plants per year (~ 1GW each) at the equivalent of France’s GDP, these countries alone could afford to build about 117 power plants per year, even without any greater urgency than the French brought to bear on their road to energy independence.¶ Consider that there are about 400 nuclear power plants in the world today. At this entirely feasible rate of construction we could more than double the planet’s nuclear capacity in just four years. Remember, the French accomplished their transformation with non-modular, albeit standardized, Gen II designs. Modular construction, passive safety systems, and factory fabrication, divided among companies all over the planet, could realistically convert the planet’s electricity production to virtually all nuclear in a couple decades, with abundant surplus electricity for ancillary uses such as desalination and the production of liquid fuels such as ammonia.

#### No investment or solvency for renewables now

Floyd, 9/28/12 [The Gadsden Times, director of United Kingdom manufacturing, Goodyear Tire & Rubber Co., vice president of manufacturing and international operations, General Tire & Rubber Co., and director of manufacturing, Chrysler Corp, <http://www.gadsdentimes.com/article/20120928/NEWS/120929802>]

Energy contributions by solar and wind to the U.S. power grid are miniscule when compared to coal, oil and gas, hydro and nuclear. In addition, the renewable energies are not cost effective and it is doubtful they will be.¶ In a recent article in The Gadsden Times, a writer complained that one of the major issues for wind and solar was states lagging in incentives for solar and wind. ¶ Was the writer joking, or did he not understand that huge governmental subsidies for solar and wind power come from taxpayer dollars? ¶ The U.S. Department of Energy reported that federal subsidies for solar are $775 per megawatt hour and for wind $57 per megawatt hour. Conversely, subsidies for oil and gas are $0.64 cents per megawatt hour, hydro power was $0.82 cents, coal $0.64 cents and nuclear $3.14 per megawatt hour. The difference in the subsidy for wind and solar versus traditional energy sources is obscene.¶ In 2011 the wind turbine industry received $5 billion in subsidies, in spite of the fact it produced only 2.3 percent of the total energy used in the United States. ¶ The Wall Street Journal reported in its Aug. 18 opinion page that for every tax dollar that goes to coal, oil and natural gas, wind gets $88 and solar $1,212. Subsidy comparisons don’t consider that the oil, coal,and natural gas industries paid more than $10 billion in taxes in 2009. Wind and solar are net drains on the United States Treasury.¶ The Journal suggested that maybe it is time to eliminate all federal subsidy programs for the energy industry. This is a proposal that should be taken very seriously. Why subsidize industries that historically generate huge profits? ¶ An Indiana newspaper reported that the company E-on Climate & Renewables is in a race against time for construction of 125 wind turbines in the Tipton, Ind., area. E-on is concerned federal subsidies they now enjoy will expire at the end of 2012. That’s unlikely because subsidies for wind and solar have been around since 1992 and have been extended seven times.¶ E-on has stated that each wind turbine will generate enough electrical power for 350 homes. So it would follow that 125 turbines will generate enough power to supply 43,750 homes. This is more than enough electrical power for all of Tipton and Kokomo, Ind.¶ The problem is the cost of the power. If the two communities had to pay for the power without taxpayer help, it would bankrupt every family living in the two communities.¶ What about times when there is no wind to power the turbines? Would these communities have to supplement electrical needs with power from alternative sources?¶ As utilization goes down for traditional electrical suppliers, unit costs go up. This means that alternative power supplied by traditional sources would also increase in cost. Tipton and Kokomo would be caught in a “Catch 22.” Implementation of wind turbines is a loser for the American taxpayer until the supplies of coal, natural gas and oil are depleted. Even then new nuclear power plants could supply 90 percent or more of the United States demand. ¶ Wind farms are “feel-good projects” with enormous associated costs to the American taxpayer. For irrelevance, wind farms are only exceeded by the solar industry. Sometimes, it is not good to be No. 1. ¶ To answer the question are American taxpayers lagging in incentives for renewable energy sources? I don’t think so.¶ I understand startup costs and the time it takes to establish appropriate operating numbers. Wind and solar power are far removed from the realm of cost effectiveness. ¶ There is much doubt wind and solar will be more than a drop in the ocean in relation to contributing to power requirements for the United States.

#### No tradeoff and risk of a link turn

Scandurra and Romano ‘11

(Giuseppe and Antonio Angelo, Department of Statistical Mathematics and Economics at the University of Napoli, “The investments in renewable energy sources: do low carbon economies better invest in green technologies?”, Munich Personal RePEc Archive, 2011, http://mpra.ub.uni-muenchen.de/34216/2/MPRA\_paper\_34216.pdf)

If it can have some statistical significance, the estimates in the low carbon economies are generally higher, in absolute value, than in the high carbon sample, except the autoregressive parameters. In fact, the influence of investments in renewable energy source is stronger in the high carbon countries than to the other countries (low carbon). The former try to invest mostly in renewable sources in order to reduce their footprint and respect the international agreement that they ratified. Significant is the inverse relationship between renewable investments and share of nuclear consumption. Probably, the continuous base load electricity ensured by nuclear power plants and the absence of greenhouse gas emission allow these countries to invest in additional renewable energy in a complementary way, in order to reach an optimal energy mix and to ensure the subsidies for investment in renewable energy.

### Prolif Adv

#### No resiliency now

**Evans-Pritchard 10** [Ambrose Evans-Pritchard, “No defence left against double-dip recession, says Nouriel Roubini”, Telegraph UK, 9-5-2010]

“The US has run out of bullets,” said Nouriel Roubini, professor at New York University, and one of a caste of luminaries with grim forecasts at the annual Ambrosetti conference on Lake Como. “More quantitative easing (bond purchases) by the Federal Reserve is not going to make any difference. Treasury yields are already down to 2.5pc yet credit spreads are widening again. Monetary policy can boost liquidity but it can’t deal with solvency problems,” he told Europe’s policy elite. Dr Roubini said the US growth rate was likely to fall below 1pc in the second half of the year, despite the biggest stimulus in history: a cut in interest rates from 5pc to zero, a budget deficit of 10pc of GDP, and $3 trillion to shore up the financial system. The anaemic pace compares with rates of 4pc-6pc at this stage of recovery in normal post-war recoveries. “We have reached stall speed. Any shock at this point can tip you back into recession. With interbank spreads rising, you can get a vicious circle like 2008-2009,” he said, describing a self-feeding process as the real economy and the credit system hurt each other. “There is a 40pc chance of double-dip recession in the US, and worse in Japan. Even if it is not technically a recession it will feel like it,” he added. Hans-Werner Sinn, head of Germany’s IFO Institute, said the US would have to purge its debt excesses the hard way. “The bitter truth is that there is no way out of this with monetary and fiscal policy. They will just have to see their living standards go down. I see a decade of difficulties for the US,” he said.

### T

#### Counter-interpretation—nuclear power is the entirety of the nuclear fuel cycle, including not everything immediately related to electricity generation

MIT ’11 (“The Future of Nuclear Power”, Chapter 4 – Fuel Cycles, 2011, <http://web.mit.edu/nuclearpower/pdf/nuclearpower-ch4-9.pdf>)

The description of a possible global growth scenario for nuclear power with 1000 or so GWe deployed worldwide must begin with some specification of the nuclear fuel cycles that will be in operation. The nuclear fuel cycle refers to all activities that occur in the production of nuclear energy. It is important to emphasize that producing nuclear energy requires more than a nuclear reactor steam supply system and the associated turbine-generator equipment required to produce electricity from the heat created by nuclear fission. The process includes ore mining, enrichment, fuel fabrication, waste management and disposal, and finally decontamination and decommissioning of facilities. All steps in the process must be specified, because each involves different technical, economic, safety, and environmental consequences. A vast number of different fuel cycles appear in the literature, and many have been utilized to one degree or another. We review the operating characteristics of a number of these fuel cycles, summarized in Appendix 4. In this report, our concern is not with the description of the technical details of each fuel cycle. Rather, we stress the importance of aligning the different fuel cycle options with the global growth scenario criteria that we have specified in the last section: cost, safety, nonproliferation, and waste. This is by no means an easy task, because objective quantitative measures are not obvious, there are great uncertainties, and it is difficult to harmonize technical and institutional features. Moreover, different fuel cycles will meet the four different objectives differently, and therefore the selection of one over the other will inevitably be a matter of judgment. All too often, advocates of a particular reactor type or fuel cycle are selective in emphasizing criteria that have led them to propose a particular candidate. We believe that detailed and thorough analysis is needed to properly evaluate the many fuel cycle alternatives. We do not believe that a new technical configuration exists that meets all the criteria we have set forth, e.g. there is not a technical ‘silver bullet’ that will satisfy each of the criteria. Accordingly, the choice of the best technical path requires a judgment balancing the characteristics of a particular fuel cycle against how well it meets the criteria we have adopted. Our analysis separates fuel cycles into two classes: “open” and “closed.” In the open or once-through fuel cycle, the spent fuel discharged from the reactor is treated as waste. See Figure 4.1. In the closed fuel cycle today, the spent fuel discharged from the reactor is reprocessed, and the products are partitioned into uranium (U) and plutonium (Pu) suitable for fabrication into oxide fuel or mixed oxide fuel (MOX) for recycle back into a reactor. See Figure 4.2. The rest of the spent fuel is treated as high-level waste (HLW). In the future, closed fuel cycles could include use of a dedicated reactor that would be used to transmute selected isotopes that have been separated from spent fuel. See Figure 4.3. The dedicated reactor also may be used as a breeder to produce new fissile fuel by neutron absorption at a rate that exceeds the consumption of fissile fuel by the neutron chain reaction.2 In such fuel cycles the waste stream will contain less actinides,3 which will significantly reduce the long-term radioactivity of the nuclear waste.4

#### IFR is nuclear power

**Till 9** [“Plentiful Energy and the IFR Story”, Charles E. Till, Nuclear physicist and associate lab director at Argonne National Laboratory, 05/09]

The name Integral Fast Reactor described the principal characteristics of the technology: the word Integral was chosen to denote the fact that every element of a complete nuclear power system was being developed simultaneously, and each was an integral part of the whole: The reactor itself, the processes for treatment of the spent fuel as it is replaced by new fuel, the fabrication of the new fuel, and the treatment of the waste to put it in final form suitable for disposal�all were an integral part of the development and the product. Nothing was to be left behind to be developed later. No detail was to be left hanging, unresolved, to raise problems later, as had been the case in present generation of nuclear power. (The word Fast simply denotes technical characteristics of the neutrons in reactor operation, useful to know but not central to this discussion.)

### Elections

#### Romney is a pragmatist – no risk of neocon-driven wars

Peter Foster 7-25-2012; Peter Foster is the Telegraph's US Editor based in Washington DC. He moved to America in January 2012 after three years based in Beijing, where he covered the rise of China. Before that, he was based in New Delhi as South Asia correspondent. He has reported for The Telegraph for more than a decade, covering two Olympic Games, 9/11 in New York, the 2004 Boxing Day tsunami, the post-conflict phases in Afghanistan and Iraq and the 2011 Fukushima disaster in Japan. “Mitt Romney wants to put the spine back into US foreign policy, but he's not a warrior. He’s a pragmatist” http://blogs.telegraph.co.uk/news/peterfoster/100172414/mitt-romney-wants-to-put-the-spine-back-into-us-foreign-policy-but-hes-not-a-warrior-hes-a-pragmatist/

The Obama campaign will try and cast this as a return to the ‘dark days of Dubya’ when crusading neo-cons waged righteous war after 9/11, leading the free world into a financially ruinous quagmire from which only now, Obama is finally managing to extract us. But we this doesn't ring true for two reasons: first, America is war-weary, and Romney knows it; there is no appetite for adventure right now and second, because ‘Dubya’ himself is nowhere to be seen during this campaign. He is conspicuously and deliberately absent. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. That is why Romney, for all his huffing and puffing about Obama and Afghanistan, is still planning to have the troops out by 2014. It is why when he talks about Iran, he talks about the iron application of sanctions and not unleashing the bunker-buster at first light. And also why there's no mention of designating China as a currency manipulator on day one of his presidency.

#### Romney would take the same approach to China as President Obama- wouldn’t start a trade war

**Politico, 9-15-12**, p. http://www.politico.com/news/stories/0912/81254.html

An actual Romney policy, many corporate executives believe, would have the same kind of focus on bringing cases before the World Trade Organization and negotiating behind closed doors — the same approach of Obama and George W. Bush.

“On his first day on the job, Romney is not going to put himself on the immediate defensive with the world’s second largest economy,” said one top financial industry executive who strongly supports Romney. The executive, like many others interviewed for this story, asked not to be identified by name so as not to jeopardize relations with a possible future president.

#### China won’t retaliate—no impact

Bosco 9/6—national security consultant, master of laws from Georgetown (Joseph A., 9/6/12, <http://www.washingtonpost.com/opinions/china-and-a-mitt-romney-presidency/2012/09/06/32917432-f76f-11e1-a93b-7185e3f88849_story.html>, RBatra)

First, it takes two to wage a “trade war.” When China realizes that Mr. Romney is serious about declaring it a currency manipulator (which it is), wiser counsel may well prevail in Beijing. Playing by international rules is far more in China’s interest than is retaliating against free and fair trade. China could avoid the choice between dangerous escalation and embarrassing submission by preemptively starting to free its currency before a Romney inauguration.

#### Polls are wrong, Romney is winning Ohio – early voter data has messed up the polls

**Jordan, 10/25/12** - small-business market-research consultant (Josh, “Why Romney Doesn’t Need a Poll Lead in Ohio” National Review, http://www.nationalreview.com/corner/331593/why-romney-doesnt-need-poll-lead-ohio-josh-jordan)

The race for Ohio is slowly tightening, but Mitt Romney does not hold a lead in a single poll in the current Real Clear Politics average (he is tied in two). Two polls from Time and CBS/Quinnipiac have grabbed headlines by showing Obama a five-point lead in each. Romney is chipping away at Obama’s poll lead, but the Democratic advantage in party-ID has increased across these polls. When looking at the polls in Ohio, it is becoming entirely possible that Mitt Romney should be able to win Ohio without ever showing a consistent lead in the polls, or any lead at all.

In the past week Romney has trimmed four-tenths of a point off of his deficit in the RCP average, going from 2.5 to 2.1, but at the same time, the average party-ID advantage for Democrats in these polls has risen from 5.5 to 6.5. A big reason for the increase in Democrats’ share in the polls is due to early voting. If a pollster calls someone who says they voted already, they are automatically passed through the likely-voter screen since they have, after all, voted. The problem with this can be best summed up by Gregory House: “Everybody lies.”

Pollsters can only work with what their respondents tell them, and this is the reason that likely-voter screens can be so tricky, though important, in polling. The preferable response is that you are going to vote or, in the case of Ohio, that you’ve already voted. Many respondents will say they are going to vote (or have voted) when in fact they may not end up doing it (this effect is known as social-desirability bias). For this reason, some likely-voter screens ask about previous elections and general political enthusiasm to gauge the actual likelihood that a voter will end up in the booth on Election Day. But that is where early voting throws the screen out the window — if a voter says they voted, there is nothing a pollster can do to but assume that it’s true.

Enter Ohio, where the current estimates from compiling early in-person and absentee voting shows early turnout to be about 15 percent of voters. But responses in the current polls claim that 23 percent of registered voters have already voted. That means that polls are overstating early voting by eight percentage points on average. This could be in part because some voters have requested an absentee ballot and report that as voting, some have mailed in ballots that haven’t been counted as received yet, but some voters are also just flat out saying they voted when they haven’t. It’s impossible to know the exact reason, but it’s clear that more are claiming to vote than really have.

In the polls’ early-voting results, Obama leads on average by 20 points. There are indications that the GOP has shrunk the Democratic advantage in this category significantly from 2008, but it is unclear how much. Either way, Obama’s early-voting advantage gives him a lead that Romney is only scraping away at with his Election Day voter lead. But if pollsters are finding more respondents who are claiming to have already voted than what the records show, some of this early-voter advantage is illusory.

#### Romney will win – independent voter trends and party-ID bias

**Jordan, 10/25/12** - small-business market-research consultant (Josh, “Why Romney Doesn’t Need a Poll Lead in Ohio” National Review, http://www.nationalreview.com/corner/331593/why-romney-doesnt-need-poll-lead-ohio-josh-jordan)

This is why it is increasingly difficult for Romney to show an lead in the Ohio polls. But even with Obama currently enjoying a 2.1 point lead, Romney is still in great shape to win Ohio on Election Day. Here are some of the reasons for the optimism coming from Boston these days:

Romney’s strength with independents keeps growing: Last week when Obama led the Real Clear Politics average by 2.5 points, Romney led among independents by an average of 8.7 points. Romney has since increased that lead with independents to 12.3 points, which is why he’s been able to cut Obama’s overall lead even as the polls have leaned more Democratic. In 2008 Obama beat McCain with independents by eight points. It would be almost impossible for Obama to win Ohio while suffering a 20-point swing among independents.

The polls give Democrats a better turnout advantage than they had in 2008: As I explained in my last Ohio post, in 2008 Democrats beat Republicans in turnout by five points. The current polls show an average of D+6.6. A D+5 turnout in 2008 gave Obama a 4.5-point victory, while he is currently leading by only 2.1 points on an even greater D+6.6 turnout. Again, we know it should be very difficult for Democrats to match their 2008 turnout, let alone increase it.

History suggests late deciders will break against the incumbent: This is a rule that always receives some skepticism, but it’s very likely to benefit Romney at least some on Election Day. In 2004, late deciders broke against George W. Bush heavily, even though he was a wartime president. John Kerry beat Bush by 25 points among voters who decided in the last month, 28 points among voters that decided in the three days prior to Election Day, and 22 points among day-of deciders. Those voters were 20 percent of the Ohio electorate; while this year there are expected to be fewer late deciders, Obama cannot afford to lose among by those margins and still win.

In Ohio, Republicans tend to outperform their share of the national vote: In the last nine elections, the GOP has outperformed in Ohio. With Romney currently running just ahead of Obama nationally, it seems much more likely that Obama’s lead in Ohio has more to do with the higher party-ID advantage than a dramatic shift in Ohio from the past nine elections.

Strength with crossover voters in Ohio: In addition to Romney’s strength with independents, in the past two elections the GOP candidate has won over more Democrat votes than he’s lost Republican ones. Obama’s Ohio win in 2008 was based entirely on his strength with independents and the wave turnout, both of which are highly unlikely to be repeated in 2012. If Romney wins with independents by anywhere near the current average he has and takes more crossover voters than Obama does, Obama would need to exceed 2008 turnout greatly to win.

#### Plan creates jobs in swing states like Ohio – popular

Korte, 4-27-12

[Gregory, USA Today, “Politics stands in the way of nuclear plant's future,” http://www.usatoday.com/money/industries/energy/story/2012-04-13/usec-centrifuges-loan-guarantees/54560118/1]

The stakes are high: It's an election year, and Ohio is a swing state. USEC estimates the project at its peak will generate 3,158 jobs in Ohio, and 4,284 elsewhere. Pike County, home to the centrifuges, has a 13% unemployment rate — the highest in Ohio. The median household income is about $40,000. The average job at USEC pays $77,316. Centrifuge parts are stacked up in Piketon. "It's as shovel-ready as they come," says spokeswoman Angela Duduit. Indeed, the project has enjoyed bipartisan support. A USA TODAY review of DOE records shows that no fewer than 46 members of Congress — 32 Republicans and 14 Democrats — have pressured the Obama administration to approve the loan guarantee for USEC. "Quick action is paramount," said one bipartisan letter. "It is imperative that this application move forward now," said another. The congressional support comes from states such as Ohio, Pennsylvania, Tennessee, Kentucky, West Virginia, Missouri, Alabama, Indiana, Maryland, North Carolina and South Carolina— an almost exact overlay of the states that would benefit from the 7,442 jobs the company says would be created.

#### Obama has many paths – he doesn’t need Ohio

**Cohn, 10/25/12** – runs the Electionnate blog for The New Republic (Nate, “Daily Breakdown: Obama's Lead Persists In Ohio, Nevada, and Wisconsin Polls”

<http://www.tnr.com/blog/electionate/109126/daily-breakdown-obamas-lead-persists-in-ohio-nevada-and-wisconsin-polls>

And Obama maintains credible alternatives if any of these states flip over the next twelve days. If Romney won Nevada, Obama could easily counter with Iowa, although the state is somewhat under-polled. If Obama lost Wisconsin, he could compensate with both Iowa and New Hampshire. And even if Obama lost Ohio, Romney would still need to block Obama's paths through Colorado, Virginia, and Florida. Romney would probably lose the election if Obama carried Colorado or Virginia, but the two states are coin-flips and three polls (admittedly partisan or of middling quality) from yesterday showed Obama leading in the Commonwealth. Romney more clearly leads in Florida, but his advantage in the Sunshine State isn't any larger than Obama's in Ohio. Here's one stark hypothetical: given Obama's many paths to 270, there's a case that Obama would still be a favorite, if Romney was suddenly assured of victory in Ohio.

#### Polling and independent voters = Romney win

**Cohen, 10/25**/12 (Jon, “Post-ABC tracking poll: Romney 50 percent, Obama 47” Washington Post,

<http://www.washingtonpost.com/blogs/the-fix/wp/2012/10/25/post-abc-tracking-poll-romney-50-percent-obama-47/>

¶ Republican Mitt Romney has edged ahead of President Obama in the new Washington Post-ABC News national tracking poll, with the challenger winning 50 percent of likely voters for the first time in the campaign.¶ As Romney hits 50, the president stands at 47 percent, his lowest tally in Post-ABC polling since before the national party conventions. A three-point edge gives Romney his first apparent advantage in the national popular vote, but it is not one that is statistically significant with a conventional level of 95 percent confidence.¶ Results from the tracking poll were first released Monday evening, and had Obama at 49 percent, and Romney at 48. On Tuesday and Wednesday, the results were flipped, with Romney at 49 and the president at 48. All of the results are among likely voters.¶ However, Romney does now boast a statistically — and substantively — important lead on the economy, which has long been the central issue of the race. When it comes to handling the nation’s struggling economy, 52 percent of likely voters say they trust Romney more, while 43 percent say they have more faith in the president.¶ And just as the challenger has leaped ahead on this score, he has effectively neutralized what has been a consistent fall-back for Obama: economic empathy. In the new poll, 48 percent say Obama is more in tune with the economic problems people are having, and nearly as many, 46 percent, say Romney is the one who is more in touch. Just two weeks ago, Obama had a nine-point lead on the question.¶ The two candidates also run about evenly on the question of handling “international affairs,” little difference from where they were heading into Monday’s debate on foreign policy.¶ Romney’s improvements on the economy — and on empathizing with the plight of those struggling financially — has been fueled by gains among political independents. Independents now side with Romney by campaign highs on both the economy (61 to 34 percent) and on understanding people’s problems (52 to 42 percent).¶ These advantages with independents undergird a sizable, 19 percentage-point Romney lead over Obama on the horse race. Should that advantage stick, it would be the sharpest tilt among independents in a presidential election since Ronald Reagan’s 1984 landslide win. (Reagan won independent and other unaffiliated voters 63 to 36 percent, according to the exit poll). Obama won them by eight in 2008.

#### Huge laundy list of nuclear incentives and construction now

**Johnson ’12** (US Campaign Trail: is nuclear in the equation? By John Johnson on Apr 25, 2012, nuclear energy expert and analyst, Nuclear Energy Insider, Nuclear Business Intelligence <http://analysis.nuclearenergyinsider.com/new-build/us-campaign-trail-nuclear-equation>

Just the same, the Obama Administration is considered a nuclear supporter, having made several moves to help jumpstart America’s nuclear energy industry. Obama plugged nuclear power during his first State Of The Union speech several years ago, and has generally been upbeat about the energy source’s future in the U.S. The Campaign Obama, a Democrat, will face Mitt Romney in the November election. Romney is expected to be named the official Republican nominee in August. While Romney has not taken a stance on nuclear energy during his campaign, the Obama administration has made significant investments in the sector, including a $450m budget request in March intended to advance the development of American-made small modular reactors (SMRs). Congress still needs to approve the authorization for funding. The SMRs are expected to be ready for commercial use within 10 years, and are intended for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes. “The Obama Administration and the Energy Department are committed to an all-of-the-above energy strategy that develops every source of American energy, including nuclear power, and strengthens our competitive edge in the global clean energy race,” U.S. Energy Secretary Steven Chu said when the program was announced. “Through the funding for small modular nuclear reactors, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.” John Keeley, manager of media relations for the Nuclear Energy Institute, said that the Obama administration has done what it can to support the deployment on new build-outs in the United States to build out nuclear, as well as supporting research and development efforts, such as those in the small reactor space. Research support In addition, the U.S. has invested $170 million in research grants at more than 70 universities, supporting research and development into a full spectrum of technologies, from advanced reactor concepts to enhanced safety design. “The President was explicit in his State Of The Union speech about the virtues of nuclear as a technology and its role in clean air generation,” said Keeley. “And he has been supportive of developing more nuclear plants in this country. Those initiatives have to be identified as significant evidence of support for the nuclear sector.” There are currently 104 nuclear power reactors operating in the U.S. in 31 states, operated by 30 different utilities. There are four new nuclear reactors being built in the U.S., including two in George at total expected cost of $14bn. In another sign of the U.S support for the industry, the federal government provided utility company Southern with an $8.3bn loan guarantee for the Vogtle Units 3 and 4, the first new nuclear plants to be built in the U.S. in the last 30 years. They are expected to be operational in 2016 and 2017. The U.S. Energy Department has also supported the Vogtle project and the development of the next generation of nuclear reactors by providing more than $200m through a cost-share agreement to support the licensing reviews for the Westinghouse AP1000 reactor design certification. In addition to the Vogtle plants, SCANA, a subsidiary of South Carolina Electric & Gas Co. plans to add two reactors to its nuclear power plant near Jenkinsville, S.C., by 2016 and 2019.

#### Plan happens after the election

Ramsey Cox (writer for The Hill) September 24, 2012 “Congress to hold pro forma sessions until November” http://thehill.com/blogs/floor-action/senate/251313-congress-to-hold-pro-forma-sessions-until-november

Rather than being in recess for more than five weeks, both the Senate and the House decided to hold pro forma sessions until after the November elections. Both chambers will gavel in Tuesday morning for a brief session; typically, legislative business doesn't take place in pro forma sessions. At most members ask to be recognized for a speech, but rarely do. It is unclear if the legislative branch was afraid of recess appointments by the White House, yet both sides took a formal recess in August. The Senate will hold a pro forma session every Tuesday and Friday until Nov. 13 at 2 p.m. when they’ll continue work on S. 3525, the Sportsmen Act, which would increase access to federal land for hunters and fishers while also supporting conservation measures.

#### Nuclear power doesn’t swing the election -- identical positions mean it won’t get drawn into the debate.

**Wood, 9-13-12**

[Elisa, AOL, “What Obama and Romney Don't Say About Energy,” http://energy.aol.com/2012/09/13/what-obama-and-romney-dont-say-about-energy/]

Fossil fuels and renewable energy have become touchy topics in this election, with challenger Mitt Romney painting President Barack Obama as too hard on the first and too fanciful about the second – and Obama saying Romney is out of touch with energy's future. But two other significant resources, nuclear power and energy efficiency, are evoking scant debate. What gives? Nuclear energy supplies about 20 percent of US electricity, and just 18 months ago dominated the news because of Japan's Fukushima Daiichi disaster – yet neither candidate has said much about it so far on the campaign trail. Romney mentioned nuclear power only seven times in his recently released white paper, while he brought up oil 150 times. Even wind power did better with 10 mentions. He pushes for less regulatory obstruction of new nuclear plants, but says the same about other forms of energy. Obama's campaign website highlights the grants made by his administration to 70 universities for research into nuclear reactor design and safety. But while it is easy to find his ideas on wind, solar, coal, natural gas and oil, it takes a few more clicks to get to nuclear energy. The Nuclear Energy Institute declined to discuss the candidates' positions pre-election. However, NEI's summer newsletter said that both "Obama and Romney support the use of nuclear energy and the development of new reactors."

**Nuclear power popular**

Brown ’12 (Dave Brown — Exclusive to Uranium Investing News, “United States Still Favors Nuclear Power”, <http://uraniuminvestingnews.com/11008/united-states-still-favors-nuclear-power.html>, March 28, 2012, LEQ)

According to the results of Gallup’s annual Environment survey, conducted earlier this month, the majority of Americans continue to favor nuclear energy as a source of electricity for the United States. The survey indicated that 57 percent of participants were in favor of nuclear power this year, the same amount as in 1994, the first year for the survey. This year’s results also demonstrate an equal level of support among participants as last year, just prior to the Japanese earthquake and tsunami. Support for the nuclear industry as measured by the survey has ranged from a low of 46 percent in 2001 to a high of 62 percent in 2010. These results are of significance to investors as the US is the largest consumer of uranium in the world, with 104 operational nuclear reactors. Continued public support and confidence from the country should guide future political decisions and foster economic interest in domestic and international uranium resources as well as in nuclear industry stakeholders.

#### Romney will rig the election

**Barrett 10/21** – Ph.D. Arabist-Islamologist, political analyst for PressTV

(Kevin, “Election fraud storm-clouds loom over US presidential race”, <http://www.presstv.ir/detail/2012/10/21/267897/romney-fraud-looms-in-us-election/>, dml)

Despite the thunderous silence of the media, all signs are pointing towards another neocon-Republican election theft attempt, like the successful ones of 2000 and 2004. ¶ One warning sign: The appearance of blatantly fraudulent public opinion polls giving Romney a substantial lead over Obama. While all other polls show that Obama has enough of an edge in the swing states to constitute an electoral-college “firewall,” Gallup’s national polls -- using a “likely voter” model that apparently posits an inverse correlation between voting and skin pigmentation -- currently give Romney an edge of more than five points in the popular vote. ¶ Why would the Republicans falsify a prominent national poll? To give Romney “momentum,” and create the illusion of plausibility when rigged voting machines hand him a “surprise victory.” ¶ But why just one poll? Because it’s doable. Rigging ALL the polls is a herculean task, even for a party backed by the world’s biggest crime syndicate. ¶ Is there any evidence that Romney will try to steal the swing states he needs to capture the White House? Unfortunately, yes.¶ Believe it or not, Romney actually OWNS the black-box voting machines that will fabricate -- not count -- the votes in Ohio, the most important swing state. (“Black box” machines are designed with no transparent link between the votes that go in, and the “results” that come out.)¶ As my recent radio guest Bob Fitrakis and two co-authors explain in their article Does the Romney Family Now Own Your e-Vote? ¶ Will you cast your vote this fall on a faulty electronic machine that’s partly owned by the Romney Family? Will that machine decide whether Romney will then inherit the White House? ¶ Through a closely held equity fund called Solamere, Mitt Romney and his wife, son and brother are major investors in an investment firm called H.I.G. Capital. H.I.G. in turn holds a majority share and three out of five board members in Hart Intercivic, a company that owns the notoriously faulty electronic voting machines that will count the ballots in swing state Ohio November 7. Hart machines will also be used elsewhere in the United States. ¶ In other words, a candidate for the presidency of the United States, and his brother, wife and son, have a straight-line financial interest in the voting machines that could decide this fall’s election. These machines cannot be monitored by the public. But they will help decide who “owns” the White House. ¶ They are especially crucial in Ohio, without which no Republican candidate has ever won the White House. In 2004, in the dead of election night, an electronic swing of more than 300,000 votes switched Ohio from the John Kerry column to George W. Bush, giving him a second term. A virtual statistical impossibility, the 6-plus% shift occurred between 12:20 and 2am election night as votes were being tallied by a GOP-controlled information technology firm on servers in a basement in Chattanooga, Tennessee… (Read the complete article here.)

### AT: Linear Predictions

#### **Complexity theory is wrong - linear solutions empirically are effective - the alternative dooms the world**

Kurasawa 4 (Professor of Sociology, York University of Toronto, Fuyuki, Constellations Volume 11, No 4, 2004).

Moreover, keeping in mind the sobering lessons of the past century cannot but make us wary about humankind’s supposedly unlimited ability for problemsolving or discovering solutions in time to avert calamities. In fact, the historical track-record of last-minute, technical ‘quick-fixes’ is hardly reassuring. What’s more, most of the serious perils that we face today (e.g., nuclear waste, climate change, global terrorism, genocide and civil war) demand complex, sustained, long-term strategies of planning, coordination, and execution. On the other hand, an examination of fatalism makes it readily apparent that the idea that humankind is doomed from the outset puts off any attempt to minimize risks for our successors, essentially condemning them to face cataclysms unprepared. An a priori pessimism is also unsustainable given the fact that long-term preventive action has had (and will continue to have) appreciable beneficial effects; the examples of medical research, the welfare state, international humanitarian law, as well as strict environmental regulations in some countries stand out among many others. The evaluative framework proposed above should not be restricted to the critique of misappropriations of farsightedness, since it can equally support public deliberation with a reconstructive intent, that is, democratic discussion and debate about a future that human beings would freely self-determine. Inverting Foucault’s Nietzschean metaphor, we can think of genealogies of the future that could perform a farsighted mapping out of the possible ways of organizing social life. They are, in other words, interventions into the present intended to facilitate global civil society’s participation in shaping the field of possibilities of what is to come. Once competing dystopian visions are filtered out on the basis of their analytical credibility, ethical commitments, and political underpinnings and consequences, groups and individuals can assess the remaining legitimate catastrophic scenarios through the lens of genealogical mappings of the future. Hence, our first duty consists in addressing the present-day causes of eventual perils, ensuring that the paths we decide upon do not contract the range of options available for our posterity.42 Just as importantly, the practice of genealogically inspired farsightedness nurtures the project of an autonomous future, one that is socially self-instituting. In so doing, we can acknowledge that the future is a human creation instead of the product of metaphysical and extra-social forces (god, nature, destiny, etc.), and begin to reflect upon and deliberate about the kind of legacy we want to leave for those who will follow us. Participants in global civil society can then take – and in many instances have already taken – a further step by committing themselves to socio-political struggles forging a world order that, aside from not jeopardizing human and environmental survival, is designed to rectify the sources of transnational injustice that will continue to inflict needless suffering upon future generations if left unchallenged.

#### concrete action key

Levy 99- PhD @ Centre for Critical Theory at Monash

Neil, “Discourses of the Environment,” ed: Eric Darier, p. 215

If the ‘technological fix’ is unlikely to be more successful than strategies of limitation of our use of resources, we are, nevertheless unable simply to leave the environment as it is. There is a real and pressing need for space, and more accurate, technical and scientific information about the non-human world. For we are faced with a situation in which the processes we have already set in train will continue to impact upon that world, and therefore us for centuries. It is therefore necessary, not only to stop cutting down the rain forests, but to develop real, concrete proposals for action, to reverse or at least limit the effects of our previous interventions. Moreover, there is another reason why our behavior towards the non-human cannot simply be a matter of leaving it as it is, at least in so far as our goals are not only environmental but also involve social justice. For if we simply preserve what remains to us of wilderness, of the countryside and of park land, we also preserve patterns of very unequal access to their resources and their consolations (Soper 1995: 207).in fact, we risk exacerbating these inequalities. It is not us, but the poor of Brazil, who will bear the brunt of the misery which would result from a strictly enforced policy of leaving the Amazonian rain forest untouched, in the absence of alternative means of providing for their livelihood. It is the development of policies to provide such ecologically sustainable alternatives which we require, as well as the development of technical means for replacing our current greenhouse gas-emitting sources of energy. Such policies and proposals for concrete action must be formulated by ecologists, environmentalists, people with expertise concerning the functioning of ecosystems and the impact which our actions have upon them. Such proposals are, therefore, very much the province of Foucault’s specific intellectual, the one who works ‘within specific sectors, at the precise points where their own conditions of life or work situate them’ (Foucault 1980g: 126). For who could be more fittingly described as ‘the strategists of life and death’ than these environmentalists? After the end of the Cold War, it is in this sphere, more than any other, that man’s ‘politics places his existence as a living being in question’ (Foucault 1976: 143). For it is in facing the consequences of our intervention in the non-human world that the hate of our species, and of those with whom we share this planet, will be decided?

#### Even if predictions aren’t perfect acting on relative confidence of scenarios materializing is good---the alt is etiher political paralysis or pure reaction

**Ulfelder 11** Jay Ulfelder is Research Director for the Political Instability Task Force, Science Applications International Corporation "Why Political Instability Forecasts Are Less Precise Than We’d Like (and Why It’s Still Worth Doing)" May 5 dartthrowingchimp.wordpress.com/2011/05/05/why-political-instability-forecasts-are-less-precise-than-wed-like-and-why-its-still-worth-doing/

If this is the best we can do, then what’s the point? Well, consider the alternatives. For starters, we might decide to skip statistical forecasting altogether and just target our interventions at cases identified by expert judgment as likely onsets. Unfortunately, those expert judgments are probably going to be an even less reliable guide than our statistical forecasts, so this “solution” only exacerbates our problem.

Alternatively, we could take no preventive action and just respond to events as they occur. If the net costs of responding to crises as they happen are roughly equivalent to the net costs of prevention, then this is a reasonable choice. Maybe responding to crises isn’t really all that costly; maybe preventive action isn’t effective; or maybe preventive action is potentially effective but also extremely expensive. Under these circumstances, early warning is not going to be as useful as we forecasters would like.

If, however, any of those last statements are false–if responding to crises already underway is very costly, or if preventive action is (relatively) cheap and sometimes effective–then we have an incentive to use forecasts to help guide that action, in spite of the lingering uncertainty about exactly where and when those crises will occur.

Even in situations where preventive action isn’t feasible or desirable, reasonably accurate forecasts can still be useful if they spur interested observers to plan for contingencies they otherwise might not have considered. For example, policy-makers in one country might be rooting for a dictatorship in another country to fall but still fail to plan for that event because they don’t expect it to happen any time soon. A forecasting model which identifies that dictatorship as being at high or increasing risk of collapse might encourage those policy-makers to reconsider their expectations and, in so doing, lead them to prepare better for that event.

Where does that leave us? For me, the bottom line is this: even though forecasts of political instability are never going to be as precise as we’d like, they can still be accurate enough to be helpful, as long as the events they predict are ones for which prevention or preparation stand a decent chance of making a (positive) difference.

### States CP – Harvard

#### Credit rating

**Sullivan and Walsh, 8 -** Mary Anne Sullivan, partner in Hogan & Hartson's energy practice, has more than 25 years of experience as an energy lawyer. She previously served as general counsel of the U.S. Department of Energy and as deputy general counsel for environment and nuclear programs. Sam Walsh is an associate at Hogan & Hartson (“Federal Loan Guarantees,” Electric Light and Power, Mar/April, ABI Inform)

In their rulemaking comments, Wall Street firms emphasized that a loan guarantee must represent the unconditional commitment of the full faith and credit of the United States if the program is to succeed in attracting affordable private investment to innovative technologies. The final rule seems to have calmed concerns that the guarantees might be conditioned in a way that would preclude the "AAA" rating for the federally guaranteed debt that the program was designed to assure. The guarantees will be absolute, absent fraud or material misrepresentation by the holder of a guaranteed obligation.

#### Certainty is essential – only effective method of catalyzing investment

**Whitefield, 11** [5/4/11, STATEMENT OF THE HONORABLE ED WHITFIELD CHAIRMAN, SUBCOMMITTEE ON ENERGY AND POWER, “The Role of the Nuclear Regulatory Commission in America’s Energy Future, http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/050411/Whitfield.pdf

While the NRC may not be the direct cause of this uncertainty – the Obama Administration’s policy is - the NRC’s actions will contribute to the uncertainty one way or another. Beyond open adjudicatory issues, the NRC has recently taken administrative action to close down its review of Yucca Mountain, which will deprive the public of the first independent government assessment of the merits of Yucca Mountain’s construction. That doesn’t bode well for a nuclear renaissance. On the front end of nuclear power development, I’m very interested to hear about whether the NRC can develop and provide more regulatory certainty in its licensing and re-licensing programs. As in other energy sectors, regulatory certainty, such as keeping to decision schedules, is essential for ensuring the investments necessary to develop nuclear energy. Additionally, I think it is worth reviewing the Commission’s organizational structure, and whether an agency rightly focused on safety is suitably structured to also facilitate the advancement of new nuclear generation. And connected with regulatory certainty, are clear and well developed safety engineering evaluations. As mentioned, the safety record of NRC is unparalleled. But recent events in Japan have raised questions in the public’s mind about how well the NRC does its job. We need to be confident the NRC is up to the task. I believe the agency is, but scrutiny is helpful to maintain the public trust. We do not want to overreact to events based on poor and faulty information or other political agendas. Nuclear power is critical to this nation. We should recognize its importance for a growing economy and not lose sight of the tremendous value a reliable, affordable power supply will mean for the future health and wealth of the United States.

#### Can’t solve stimulus – massive investment necessary to avoid double-dip – states act as anti-stimulus

POLLACK ‘11 - Economic Policy Institute; Office of Management and Budget and the George Washington Institute of Public Policy; staff member for President Obama’s National Commission on Fiscal Responsibility and Reform; M.P.P. The George Washington University (Ethan, “Two years into austerity and counting…”, October 19, http://www.epi.org/blog/years-austerity-counting/)

It’s popular to criticize Keynesian economics by alleging that the Recovery Act was an experiment in fiscal expansion, and because two-and-a-half years later the economy still hasn’t roared back to life, it must have failed.

What this criticism forgets is that the federal government isn’t the only government setting fiscal policy. While the federal government did conduct Keynesian expansionary fiscal policy over the last few years, the states have been doing the reverse, acting, as Paul Krugman put it, like “50 Herbert Hoovers” as they cut budgets and raise taxes. They’re forced to do this because the cratering of private-sector spending which threw the economy into recession blew huge holes in their budgets (in particular with a huge fall in income, sales, and property taxes, and increases in demands on safety-net programs), and just about all of them are required to balance their budgets each year. Overall, states have had to close over $400 billion in shortfalls over the last few years – this is spending power siphoned off from the economy and acts as a significant “anti-stimulus.”

This means that just looking at the amount of federal stimulus that’s been enacted significantly overestimates how much fiscal support has actually been pumped into the economy. In fact, as the Goldman Sachs graph below shows, the net fiscal expansion across all levels of government only lasted through the third quarter of 2009. For the last two years, state and local cuts have been overwhelming the federal fiscal expansion, making overall fiscal policy across all levels of government actually contractionary and creating a net drag on economic growth.

What’s needed to reverse this drag of public-sector austerity on growth? The $35 billion for state and local aid that’s part of the American Jobs Act is a good start, as it would help keep states and local governments from being forced to cut further. As the last two years of austerity have shown, this would only serve to further weaken the economy. And if we’re going to get out of this economic hole, we first need to stop digging down further.

#### Can’t solve nuclear leadership – not perceived

Fertel, 05 - Senior Vice President And Chief Nuclear Officer Nuclear Energy Institute (Marvin, CQ Congressional Testimony, “NUCLEAR POWER'S PLACE IN A NATIONAL ENERGY POLICY,” 4/28, lexis) //DH

Industry and government will be prepared to meet the demand for new emission-free baseload nuclear plants in the 2010 to 2020 time frame only through a sustained focus on the necessary programs and policies between now and then. As it has in the past, strong Congressional oversight will be necessary to ensure effective and efficient implementation of the federal government's nuclear energy programs, and to maintain America's leadership in nuclear technology development and its influence over important diplomatic initiatives like nonproliferation. Such efforts have provided a dramatic contribution to global security, as evidenced by the U.S.-Russian nonproliferation agreement to recycle weapons-grade material from Russia for use in American reactors. Currently, more than 50 percent of U.S. nuclear power plant fuel depends on converted Russian warhead material. Nowhere is continued congressional oversight more important than with DOE's program to manage the used nuclear fuel from our nuclear power plants. Continued progress toward a federal used nuclear fuel repository is necessary to support nuclear energy's vital role in a comprehensive national energy policy and to support the remediation of DOE defense sites. Since enactment of the 1982 Nuclear Waste Policy Act, DOE's federal repository program has repeatedly overcome challenges, and challenges remain before the Yucca Mountain facility can begin operation. But as we address these issues, it is important to keep the overall progress of the program in context. There is international scientific consensus that a deep geologic repository is the best solution for long-term disposition of used military and commercial nuclear power plant fuel and high-level radioactive byproducts. The Bush administration and Congress, with bipartisan support, affirmed the suitability of Yucca Mountain for a repository in 2002. Over the past three years, the Energy Department and its contractors have made considerable progress providing yet greater confirmation that this is the correct course of action and that Yucca Mountain is an appropriate site for a national repository. --During the past year, federal courts have rejected significant legal challenges by the state of Nevada and others to the Nuclear Waste Policy Act and the 2002 Yucca Mountain site suitability determination. These challenges questioned the constitutionality of the Yucca Mountain Development Act and DOE's repository system, which incorporates both natural and engineered barriers to contain radioactive material safely. In the coming year, Congress will play an essential role in keeping this program on schedule, by taking the steps necessary to provide increased funding for the project in fiscal 2006 and in future years. Meeting DOE's schedule for initial repository operation requires certainty in funding for the program. This is particularly critical in view of projected annual expenditures that will exceed $1 billion beginning in fiscal 2007. Meeting these budget requirements calls for a change in how Congress provides funds to the project from monies collected for the Nuclear Waste Fund. The history of Yucca Mountain funding is evidence that the current funding approach must be modified. Consumer fees (including interest) committed to the Nuclear Waste Fund since its f6rmation in 1983 total more than $24 billion. Consumers are projected to pay between $750 million to $800 million to the fund each year, based on electricity generated at the nation's 103 reactors. This is more than $2 million per day. Although about $8 billion has been used for the program, the balance in the fund is nearly $17 billion. In each of the past several years, there has been a gap between the annual fees paid by consumers of electricity from nuclear power plants and disbursements from the fund for use by DOE at Yucca Mountain. Since the fund was first established, billions of dollars paid by consumers of electricity from nuclear power plants to the Nuclear Waste Fund-intended solely for the federal government's used fuel program-in effect have been used to decrease budget deficits or increase surpluses. The industry believes that Congress should change the funding mechanism for Yucca Mountain so that payments to the Nuclear Waste Fund can be used only for the project and be excluded from traditional congressional budget caps. Although the program should remain subject to congressional oversight, Yucca Mountain appropriations should not compete each year for funding with unrelated programs when Congress directed a dedicated funding stream for the project.¶ The industry also believes that it is appropriate and necessary to consider an alternative perspective on the Yucca Mountain project. This alternative would include an extended period for monitoring operation of the repository for up to 300 years after spent fuel is first placed underground. The industry believes that this approach would provide ongoing assurance and greater confidence that the repository is performing as designed, that public safety is assured, and that the environment is protected. It would also permit DOE to apply evolving innovative technologies at the repository. Through this approach, a scientific monitoring program would identify additional scientific information that can be used in repository performance models. The project then could update the models, and make modifications in design and operations as appropriate.¶ Congressional committees like this one can help ensure that DOE does not lose sight of its responsibility for used nuclear fuel management and disposal, as stated by Congress in the Nuclear Waste Policy Act of 1982. The industry fully supports the fundamental need for a repository so that used nuclear fuel and the byproducts of the nation's nuclear weapons program are securely managed in an underground, specially designed facility. World-class science has demonstrated that Yucca Mountain is the best site for that facility. A public works project of this magnitude will inevitably face challenges. Yet, none is insurmountable. DOE and its contractors have made significant progress on the project and will continue to do so as the project enters the licensing phase. Congressional oversight also can play a key role in maintaining and encouraging the stability of the NRC's regulatory process. Such stability is essential for our 103 operating nuclear plants and equally critical in licensing new nuclear power plants. Congress played a key role several years ago in encouraging the NRC to move toward a new oversight process for the nation's nuclear plants, based on quantitative performance indicators and safety significance. Today's reactor oversight process is designed to focus industry and NRC resources on equipment, components and operational issues that have the greatest importance to, and impact on, safety. The NRC and the industry have worked hard to identify and implement realistic security requirements at nuclear power plants. In the three-and-a-half years since 9/11, the NRC has issued a series of requirements to increase security and enhance training for security programs. The industry complied-fully and rapidly.¶ In the days and months following Sept. 11, quick action was required. Orders that implemented needed changes quickly were necessary. Now, we should return to the orderly process of regulating through regulations.¶ The industry has spent more than $1 billion enhancing security since September 2001. We've identified and fixed vulnerabilities. Today, the industry is at the practical limit of what private industry can do to secure our facilities against the terrorist threat. NRC Chairman Nils Diaz and other commissioners have said that the industry has achieved just about everything that can be reasonably achieved by a civilian force.¶ The industry now needs a transition period to stabilize the new security requirements. We need time to incorporate these dramatic changes into our operations and emergency planning programs and to train our employees to the high standards of our industry-and to the appropriately high expectations of the NRC.¶ Both industry and the NRC need congressional oversight to support and encourage this kind of stability.¶ CONCLUSION¶ Electricity generated by America's nuclear power plants over the past half-century has played a key part in our nation's growth and prosperity. Nuclear power produces over 20 percent of the electricity used in the United States today without producing air pollution. As our energy demands continue to grow in years to come, nuclear power should play an even greater role in meeting our energy and environmental needs.¶ The nuclear energy industry is operating its reactors safely and efficiently. The industry is striving to produce more electricity from existing plants. The industry is also developing more efficient, next-generation reactors and exploring ways to build them more cost-effectively.¶ The public sector, including the oversight committees of the U.S. Congress, can help maintain the conditions that ensure Americans will continue to reap the benefits of our operating plants, and create the conditions that will spur investment in America's energy infrastructure, including new nuclear power plants.¶ One important step is passage of comprehensive energy legislation that recognizes nuclear energy's contributions to meeting our growing energy demands, ensuring our nation's energy security and protecting our environment. Equally important, however, is the need to ensure effective and efficient implementation of existing laws, like the Nuclear Waste Policy Act, and to provide federal agencies with the resources and oversight necessary to discharge their statutory responsibilities in the most efficient way possible. The commercial nuclear power sector was born in the United States, and nations around the world continue to look to this nation for leadership in this technology and in the issues associated with nuclear power. Our ability to influence critical international policies in areas like nuclear nonproliferation, for example, depends on our ability to maintain a leadership role in prudent deployment, use and regulation of nuclear energy technologies here at home, in the United States, and on our ability to manage the technological and policy challenges-like waste management-that arise with all advanced technologies.

#### Doesn’t solve the case – restrictions are codified in federal law – prevents the **requisite licensing**, means the cp fails to cause commercialization – that’s 1ac Martin AND

MIT, 10 [Massachusetts Institute of Technology, “Nuclear Energy Research and Development Roadmap: Report to Congress”, April 2010, http://ocw.mit.edu/courses/nuclear-engineering/22-033-nuclear-systems-design-project-fall-2011/readings/MIT22\_033F11\_read\_core\_doe.pdf]

In the United States, it is the responsibility of industry to design, construct, and operate commercial nuclear power plants. However, DOE has statutory authority under the Atomic Energy Act to promote and support nuclear energy technologies for commercial applications. In general, appropriate government roles include researching high-potential technologies beyond the investment horizon of industry and also reducing the technical risks of new technologies. In the case of new commercial reactor designs, potential areas of NE involvement could include: Enabling new technologies to be inserted into emerging and future designs by providing access to unique laboratory resources for new technology development and, where appropriate, demonstration. • Working through the laboratories and universities to provide unique expertise and facilities to industry for R&D in the areas of: o Innovative concepts and advanced technologies. o Fundamental phenomena and performance data. o Advanced modeling and simulation capabilities. APRIL 2010 22 34 NUCLEAR ENERGY RESEARCH AND DEVELOPMENT ROADMAP o New technology testing and, if appropriate, demonstration. o Advanced manufacturing methods. Representative R&D activities that support each of the roles stated above are presented below. The level of DOE investment relative to industry investment will vary across the spectrum of these activities, with a generally increasing trend in DOE investment for longer-term activities. Finally, there is potential to leverage and amplify effective U.S. R&D through collaborations with other nations through multilateral and bilateral agreements including the Generation IV International Forum, which is investigating multiple advanced reactor concepts. DOE is also a participant in OECD/NEA and IAEA initiatives that bear directly on the development and deployment of new reactor systems.

#### States links to politics

Kiely ‘12 [[EUGENE KIELY](http://www.factcheck.org/author/eugene-kiely/), Washington assignment editor USA today, February 17, 2012 Factcheck.org “Did Obama ‘Approve’ Bridge Work for Chinese Firms?” http://www.factcheck.org/2012/02/did-obama-approve-bridge-work-for-chinese-firms/]

Who’s to blame, if that’s the right word, if the project ends up using manufactured steel from China? The National Steel Bridge Alliance blames the state railroad agency. The Alliance for American Manufacturing says the federal Buy American laws have been “weakened with loopholes and various exemptions that make it easier for bureaucrats to purchase foreign-made goods instead of those made in American factories with American workers.” So, how did **Obama get blamed** for the decisions by state agencies and for state projects that, in at least one case**, didn’t even use federal funds?** The answer is a textbook lesson in how **information gets distorted** when emails go viral. We looked at the nearly 100 emails we received on this subject and found that Obama wasn’t mentioned at all in the first few emails. Typical of the emails we received shortly after the ABC News report aired was this one from Oct. 11, 2011: “I just got an email regarding Diane Sawyer on ABC TV stating that U. S. Bridges and roads are being built by Chinese firms when the jobs should have gone to Americans. Could this possible be true?” The answer: Yes, it’s true. End of story, right? Wrong. Days later, emails started to appear in our inbox that claimed ABC News reported that Chinese firm were receiving stimulus funds to build U.S. bridges — even though the broadcast news story didn’t mention stimulus funds at all. (The report did include a clip of Obama delivering a speech on the need to rebuild America’s bridges and put Americans to work, but said nothing about the president’s $830 billion stimulus bill.) Still, we received emails such as this one on Nov. 4, 2011, that included this erroneous claim language: “Stimulus money meant to create U.S. jobs went to Chinese firms. Unbelievable….” **It didn’t take long for Obama to be blamed**. That same day — Nov. 4, 2011 — we received an email that made this leap to Obama: “SOME CHINESE COMPANIES WHO ARE BUILDING ‘OUR’ BRIDGES. (3000 JOBS LOST TO THE CHINESE FIRM)…..AND NOW OBAMA WANTS ‘MORE STIMULUS MONEY’…..THIS IS NUTS ! ! ! If this doesn’t make you furious nothing will….” This year, Obama’s name started to surface in the subject line of such critical emails — raising the attack on the president to yet another level and perhaps ensuring the email will be even more widely circulated. Since Jan. 17, we have gotten more than a dozen emails with the subject line, “ABC News on Obama/USA Infrastructure,” often preceded with the word “SHOCKING” in all caps. The emails increasingly contain harsh language about the president. Since Jan. 11, 23 emails carried this added bit of Obama-bashing: “I pray all the unemployed see this and cast their votes accordingly in 2012!” One of those emails — a more recent one from Feb. 8 — contained this additional line: “Tell me again how Obama’s looking out for blue collar guys**. He** cancels pipelines, and **lets Chinese contractors build our bridges…” And so it goes, on and on. All from a news report that blamed state officials — not Obama — for spending taxpayer money** on Chinese firms to build U.S. bridges.

### Science Diplomacy Add-on

#### US federal nuclear leadership is key to science diplomacy

**AAAS ‘8** ((American Association for the Advancement of Science, 10 July 2008, “Energy Expert Calls on United States to Take Leadership in Nuclear Energy Framework”, <http://www.aaas.org/news/releases/2008/0710nuclear_energy.shtml>, [Miller])

**The** next U.S. **president will have a historic opportunity to exercise leadership in** increasing the global investment in **nuclear** technology**, energy expert Victor Reis said** at a AAAS briefing. But the stakes are higher than just finding an alternative to the rising price of oil and coal. Reis, a senior advisor to Secretary of Energy Samuel W. Bodman, said that a well-designed nuclear energy framework could drive global growth by bringing affordable, reliable energy to the developing world, address climate change through clean energy production, and promote international security by securing nuclear materials around the world. **"By increasing the civilian nuclear enterprise, the** next U.S. **president can make use of a historic opportunity to simultaneously attack the biggest interlocking issues that society will face for the next 50 years**," said Reis. Speaking at AAAS headquarters in Washington, D.C., Reis said that around 1.6 billion people, or 25% of the world's population, live without access to electricity and 2.4 billion, or 35%, rely on traditional, carbon-rich biomass like wood for their energy needs because they have no access to modern fuels. Because experts have found a strong correlation between electricity use and almost every statistic for quality of life including life expectancy, literacy, education, and gross domestic product per capita, Reis said, it is imperative that developed nations bring power to the world's neediest citizens. In addition to being an effective technology to meet the future energy needs of the developing world, Reis said that nuclear power generation is better for the environment because it does not release carbon dioxide into the atmosphere. In order to meet a conservative target of maintaining atmospheric carbon dioxide levels below 550 parts per million—a goal echoed in a 2008 report by the Intergovernmental Panel on Climate Change—while still fulfilling the world's energy needs, Reis says that governments must invest heavily in nuclear technology. "A lot of people around the world don't have access to electricity, and you don't want them to burn carbon-rich sources like coal," said Reis, adding that he doesn't see "how you can realistically address climate change without nuclear power." Reis said he is encouraged that many politicians, including those running for president, recognize climate change as among the most pressing issues for their first term in office. Sponsored by the AAAS Center for Science, Technology, and Security Policy, the 2 June briefing on nuclear energy brought together scientists, policy makers, students, and the media. At the event, Benn Tannenbaum, the Center's associate program director, said that he has noticed an increasing amount of opinion and commentary articles on nuclear technology in the nation's largest newspapers, suggesting that it is becoming a heavily discussed issue. "Nuclear energy has tremendous implications for the coming century," said Tannenbaum. "It's absolutely that vital that policy makers make informed decisions with the help of scientists to determine if and how nuclear energy programs move forward. The stakes are incredibly high." Reis said that regardless of U.S. domestic plans to increase nuclear energy production, a widespread global initiative to generate electricity using nuclear power is already underway. Around the world, there are already 439 nuclear reactors in 31 countries, representing 16% of the world's total electricity production. In the United States alone, there are 104 reactors representing 20% of domestic electricity production. Reis added that there are around 93 nuclear power-generating facilities on order or planned globally. He pointed out, however, that there are many challenges to increasing nuclear power around the world, most notably ensuring that radioactive materials used in nuclear power production are not obtained by terrorists or rogue states. One controversial solution announced in 2006 by the administration of U.S. President George W. Bush is the Global Nuclear Energy Partnership (GNEP), an international agreement that has been signed by 21 nations including the United States, the United Kingdom, Russia, China, and France. Under GNEP, the United States and other nations with advanced civilian nuclear energy production facilities would be responsible for safely reprocessing spent nuclear fuel from energy production and then would export it to be reused for other nations' energy programs. This would reduce the number of nuclear enrichment and reprocessing sites around the world, Reis said. He said that the Reliable Replacement Warhead (RRW) program, announced by Bush in 2004, would also help to significantly reduce the overall number of weapons in the U.S. nuclear arsenal while modernizing their design. Weapons experts believe that this may encourage other nations including Russia to reduce their stockpiles. While some experts like former Secretaries of State George P. Shultz and Henry A. Kissinger suggest that nations should aim to achieve a nuclear weapons-free world, others such as former Secretary of Defense Harold Brown and former Director of Central Intelligence John Deutch believe that it is an unreasonable goal and poor policy. Beyond the proliferation of enriched nuclear material, many critics of nuclear power production in the United States fear the increased amount of toxic materials that need to be transported from the reactors to storage after they are used. Reis said he understood those concerns but pointed to the 100 million miles of safe travel that the Department of Energy has overseen for the nation's nuclear weapons and energy materials. He said the same procedures can be applied to commercial nuclear energy. In addition, many nuclear power critics fear the consequences of reactor accidents like the 1986 Chernobyl accident in the Soviet Union and the 1979 Three Mile Island accident near Harrisburg, Pennsylvania. Reis once again pointed out the globe's "remarkable" safety record during more than 12,000 reactor-years of operation with significant improvements made to world's nuclear infrastructure following the incidents. The Three Mile Island incident caused no documented injuries and led to important improvements in U.S. and global safety operations, he said. He added that the Chernobyl disaster involved a reactor that was poorly designed and did not have sufficient containment, which lead to a new generation of reactors with higher safety specifications. Another significant issue with nuclear energy production is where to store the radioactive materials. One controversial proposal is to transport all waste to the Yucca Mountain Repository, a geological storage facility1000 feet deep in the Nevada desert. While the plan has its advantages, such as the ability to retrieve the materials after they are deposited, Reis said that many find the program "geographically unfair" because it makes one region assume the entire burden of the nation's nuclear waste. Regardless of the decision to increase nuclear energy production over the coming decades, Reis said that the Department of Energy (DOE) is able and ready to meet the new challenges of the 21st Century. With over 12,440 Ph.D. scientists, 25,000 visiting scientists, and 17 laboratories across the country, Reis said that **the DOE laboratories "represent one of the biggest scientific collections in the world [and] maybe in the history of civilization."** Beyond access to some of the **top scientific minds and computers** in the world, Reis highlighted several major DOE achievements including **maintaining six top research facilities**, certifying the U.S. nuclear weapons arsenal without underground testing, **helping other nations** secure their nuclear materials, and cleaning up the Rocky Flats weapons production facility and helping convert it into a wildlife refuge. In addition, Reis said that the DOE has nine years of successful operation of its Waste Isolation Pilot Plant (WIPP). Located in Carlsbad, New Mexico, the facility is an underground radioactive waste repository serving as a frontrunner for the Yucca Mountain site. "**Because of the implications of nuclear energy, good or bad, it is important that the** next **administration seize the opportunity for global leadership by using the Department of Energy's world leading assets**," Reis said. Reis added that **the nuclear enterprise could become a vehicle for international cooperation**, echoing a December 1953 speech by U.S. President Dwight D. Eisenhower in which he pledged to devote the nation's "entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life."

#### Science diplomacy accesses every impact

**Fedoroff ‘8** (Nina, Science and Technology Advisor to the Secretary of State, “Making Science Diplomacy more Effective”, Testimony before the House Science Subcommittee on Research and Science Education, 4-2, <http://legislative.nasa.gov/hearings/4-2-08%20Fedoroff.pdf>)

**Science by its nature facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities** for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all. Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and **cultural understanding**. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans-national and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board`s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science - particularly those that address the grand challenges in science and technology - are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world - Japan, Korea, China, E.U., India, Russia, and United States - representing 70% of the world`s current population. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world`s two nuclear powers - the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount. Using Science Diplomacy to Achieve National Security Objectives The welfare and stability of countries and regions in many parts of the globe require[s] a concerted effort by the developed world to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them **climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism**. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, **becoming regional or global threats**. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges **facing humankind** are enormous. Addressing these common challenges demands common solutions and necessitates **scientific cooperation**, common standards, and common goals. We must increasingly harness the power of American ingenuity in science and technology through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S. interests in foreign policy. There are also important challenges to the ability of states to supply their populations with sufficient food. The still-growing human population, rising affluence in emerging economies, and other factors have combined to create unprecedented pressures on global prices of staples such as edible oils and grains. Encouraging and promoting the use of contemporary molecular techniques in crop improvement is an essential goal for US science diplomacy. An essential part of the war on terrorism is a war of ideas. The creation of economic opportunity can do much more to combat the rise of fanaticism than can any weapon. The war of ideas is a war about rationalism as opposed to irrationalism. Science and technology put us firmly on the side of rationalism by providing ideas and opportunities that improve people`s lives. We may use the recognition and the goodwill that science still generates for the United States to achieve our diplomatic and developmental goals. Additionally, the Department continues to use science as a means to reduce the proliferation of the weapons` of mass destruction and prevent what has been dubbed `brain drain`. Through cooperative threat reduction activities, former weapons scientists redirect their skills to participate in peaceful, collaborative international research in a large variety of scientific fields. In addition, new global efforts focus on improving **biological**, chemical, and **nuclear security** by promoting and implementing **best scientific practices as a means to enhance security, increase global partnerships, and create sustainability.**

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### AT: Prolif DA 2AC

#### American action generates economic pressure to shift to IFRs

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

One argument is that the genie is out of the bottle. Most of the other nuclear nations are building these now or soon will be. We have to ask ourselves: are we safer if we bury our head in the sand and hope their designs are safe from accidents and terrorists? Or do we lead the world in designing safe reactors and export our technology to other countries? While accidents and terrorists are important considerations, I think a more important point is this: Without active U.S. participation in organizing rational management of the nuclear fuel cycle, there will be a leadership void, and the technologies (uranium enrichment and spent-fuel processing) needed to produce weapons material will spread without international safeguards against misuse.¶ Or we can play devil's advocate and agree with Kerry and we'll just restrict the IFR technology only to countries who already have nuclear capability since it is those countries who also emit 80% of the greenhouse gases. So it wouldn't make things any worse if you did that. And you'd actually make things better because the material used in the IFR plants under normal conditions can't be used to make weapons. So the more you can get those countries to build new IFR plants instead of second generation nuclear plants, the safer we'll all be. So if you want to reduce the risk of nuclear proliferation and if you want to reduce the risk of a nuclear catastophe, canceling the IFR would work against your objective. If other countries are going to build a nuclear plant, you want them to build IFR plants. No question. It's in everyone's best interest. And it means more energy for everyone as we saw from the chart earlier.

#### Even if they win their link arguments in the best-case scenario, it is basically impossible to get plutonium from an IFR

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Expert bomb designers at Livermore National Laboratory looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible - far, far harder than using today's reactor-grade plutonium.¶ First of all, they would need a PUREX-type plant-something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium-of any isotopic quality-this is probably the all-time, hands-down hardest.

### AT: Elections Impact Mods

#### No chance of Pakistan collapse

**Bandow 09** – Senior Fellow @ Cato, former special assistant to Reagan (11/31/09, Doug, “Recognizing the Limits of American Power in Afghanistan,” Huffington Post, http://www.cato.org/pub\_display.php?pub\_id=10924)

From Pakistan's perspective, limiting the war on almost any terms would be better than prosecuting it for years, even to "victory," whatever that would mean. In fact, the least likely outcome is a takeover by widely unpopular Pakistani militants. The Pakistan military is the nation's strongest institution; while the army might not be able to rule alone, it can prevent any other force from ruling. Indeed, Bennett Ramberg made the important point: "Pakistan, Iran and the former Soviet republics to the north have demonstrated a brutal capacity to suppress political violence to ensure survival. This suggests that even were Afghanistan to become a terrorist haven, the neighborhood can adapt and resist." The results might not be pretty, but the region would not descend into chaos. In contrast, warned Bacevich: "To risk the stability of that nuclear-armed state in the vain hope of salvaging Afghanistan would be a terrible mistake."

#### No impact to Iranian prolif

**Farley, IR prof, 9**—assistant professor at the Patterson School of Diplomacy and International Commerce at the University of Kentucky (Robert, What If Iran Got the Bomb? It would be time to calm down, 7 July 2009, http://www.foreignpolicy.com/articles/2009/07/07/what\_if\_iran\_got\_the\_bomb?page=0,0, AMiles)

There are profound differences between the Islamic Republic and the People's Republic, and 2009 is not 1969. Simply because the PRC survived a superpower confrontation, several chaotic leadership changes, and a Cultural Revolution without ever using its nukes doesn't mean that Iran poses no threat. However, it does suggest that nuclear deterrence may be as robust as advertised and that deterrence applies even to states led by people who say and do crazy things (like refraining from Western neckwear). Given Mao's penchant for bizarre behavior, earlier concerns that China might recklessly employ the nuclear weapons it was seeking in the late 1950s were probably even more legitimate than such concerns over Iran now. Nevertheless, China has acted as a responsible steward of nuclear weapons, even in situations of existential danger. So, rather than preparing for war against Iran, or believing that unconditional talks will eventually succeed (a nice hope, but unlikely), or offering a green light to a nervous regional ally convinced that nukes in crazy hands will inevitably lead to their use, perhaps American policymakers should take some comfort from history. Why not let Iran cross the nuclear threshold and spend time and energy focusing on how to make the deterrence of a nuclear Iran effective? After all, that now seems to look like the only realistic option. In short, the best lesson for the West may be this: Calm down.

#### No escalation to ME war – answers peace process

**Gelb, 10** – President Emeritus of the Council on Foreign Relations. He was a senior official in the U.S. Defense Department from 1967 to 1969 and in the State Department from 1977 to 1979 (Leslie, Foreign Affairs, “GDP Now Matters More Than Force: A U.S. Foreign Policy for the Age of Economic Power,” November/December, proquest)

Also reducing the likelihood of conflict today is that there is no arena in which the vital interests of great powers seriously clash. Indeed, the most worrisome security threats today-rogue states with nuclear weapons and terrorists with weapons of mass destruction-actually tend to unite the great powers more than divide them. In the past, and specifically during the first era of globalization, major powers would war over practically nothing. Back then, they fought over the Balkans, a region devoid of resources and geographic importance, a strategic zero. Today, they are unlikely to shoulder their arms over almost anything, even the highly strategic Middle East. All have much more to lose than to gain from turmoil in that region. To be sure, great powers such as China and Russia will tussle with one another for advantages, but they will stop well short of direct confrontation.

#### Can’t solve relations and aff solves terminal impact

**Weiss 6-19** – Founder and Chief Executive Officer of Weiss Asset Management, a Boston-based investment firm,[[2]](http://en.wikipedia.org/wiki/Andrew_Weiss_%28economist%29#cite_note-time-1) and Professor Emeritus [Boston University](http://en.wikipedia.org/wiki/Boston_University) (Andrew, 2012, “[Putin's Waiting Game](http://www.foreignpolicy.com/articles/2012/06/19/waiting_game)” <http://www.foreignpolicy.com/articles/2012/06/19/waiting_game?page=full>) Jacome

The most important yet overlooked aspect of the current situation, however, may be the cynicism and casual indifference that Putin has displayed toward the U.S.-Russian relationship in the face of his much bigger problems at home. At the moment, Putin appears to be preoccupied by the political mess created by his decision to [switch jobs with Medvedev](http://www.nytimes.com/2012/05/09/world/europe/slight-hiccup-as-putin-and-medvedev-switch-jobs-in-russia.html) and the [badly flawed Duma elections](http://www.bbc.co.uk/news/world-europe-16042797) last December. He also must contend with the ripple effects of the eurozone drama and global economic slowdown, which together have contributed to a [20 percent decline](http://online.wsj.com/article/SB10001424052702303734204577467893480636270.html?mod=ITP_moneyandinvesting_3) in global oil prices over the past two months alone.

Against this backdrop, the ups and downs of relations with Washington may be little more than a distraction from the more urgent challenge of restoring the aura of invulnerability and bezal'ternativnost' (the lack of any alternative) that bolstered Putin's authority during his first 12 years in power. Already, he seems to have fallen back on the tried-and-true formula of portraying himself as the protector of a Fortress Russia beset by imaginary foreign enemies and spies.  This gambit has long helped the Kremlin cultivate support from average citizens and build up the regime's legitimacy.

The chief beneficiaries of Putin's rule -- the increasingly affluent and middle-class residents of places like Moscow -- show no signs of muffling their anger about his return to the Kremlin despite an ongoing crackdown on political dissent. Still, Putin knows how to cater to the two-thirds of the Russian electorate that voted for him in March and reside primarily in Russia's smaller cities and countryside. He may find it hard to resist the temptation to play upon their worst fears and anti-Western stereotypes. **Sacrificing the past several years of dramatic improvement in the U.S.-Russian relationship may seem like a small price to pay if it breathes new life and legitimacy into his rule.**

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#### Trade disputes won’t escalate

**Ikenson, 09** associate director for the Center for Trade Policy Studies at the Cato Institute (Daniel, “A Protectionism Fling: Why Tariff Hikes and Other Trade Barriers Will Be Short-Lived,” 3/12, http://www.freetrade.org/pubs/FTBs/FTB-037.html

A Little Perspective, Please

Although some governments will dabble in some degree of protectionism, the combination of a sturdy rules-based system of trade and the economic self interest in being open to participation in the global economy will limit the risk of a protectionist pandemic. According to recent estimates from the International Food Policy Research Institute, if all WTO members were to raise all of their applied tariffs to the maximum bound rates, the average global rate of duty would double and the value of global trade would decline by 7.7 percent over five years.8 That would be a substantial decline relative to the 5.5 percent annual rate of trade growth experienced this decade.9

But, to put that 7.7 percent decline in historical perspective, the value of global trade declined by 66 percent between 1929 and 1934, a period mostly in the wake of Smoot Hawley's passage in 1930.10 So the potential downside today from what Bergsten calls "legal protectionism" is actually not that "massive," even if all WTO members raised all of their tariffs to the highest permissible rates.

If most developing countries raised their tariffs to their bound rates, there would be an adverse impact on the countries that raise barriers and on their most important trade partners. But most developing countries that have room to backslide (i.e., not China) are not major importers, and thus the impact on global trade flows would not be that significant. OECD countries and China account for the top twothirds of global import value.11 Backsliding from India, Indonesia, and Argentina (who collectively account for 2.4 percent of global imports) is not going to be the spark that ignites a global trade war. Nevertheless, governments are keenly aware of the events that transpired in the 1930s, and have made various pledges to avoid protectionist measures in combating the current economic situation.

In the United States, after President Obama publicly registered his concern that the "Buy American" provision in the American Recovery and Reinvestment Act might be perceived as protectionist or could incite a trade war, Congress agreed to revise the legislation to stipulate that the Buy American provision "be applied in a manner consistent with United States obligations under international agreements." In early February, China's vice commerce minister, Jiang Zengwei, announced that China would not include "Buy China" provisions in its own $586 billion stimulus bill.12

But even more promising than pledges to avoid trade provocations are actions taken to reduce existing trade barriers. In an effort to "reduce business operating costs, attract and retain foreign investment, raise business productivity, and provide consumers a greater variety and better quality of goods and services at competitive prices," the Mexican government initiated a plan in January to unilaterally reduce tariffs on about 70 percent of the items on its tariff schedule. Those 8,000 items, comprising 20 different industrial sectors, accounted for about half of all Mexican import value in 2007. When the final phase of the plan is implemented on January 1, 2013, the average industrial tariff rate in Mexico will have fallen from 10.4 percent to 4.3 percent.13

And Mexico is not alone. In February, the Brazilian government suspended tariffs entirely on some capital goods imports and reduced to 2 percent duties on a wide variety of machinery and other capital equipment, and on communications and information technology products.14 That decision came on the heels of late-January decision in Brazil to scrap plans for an import licensing program that would have affected 60 percent of the county's imports.15

Meanwhile, on February 27, a new free trade agreement was signed between Australia, New Zealand, and the 10 member countries of the Association of Southeast Asian Nations to reduce and ultimately eliminate tariffs on 96 percent of all goods by 2020.

While the media and members of the trade policy community fixate on how various protectionist measures around the world might foreshadow a plunge into the abyss, there is plenty of evidence that governments remain interested in removing barriers to trade. Despite the occasional temptation to indulge discredited policies, there is a growing body of institutional knowledge that when people are free to engage in commerce with one another as they choose, regardless of the nationality or location of the other parties, they can leverage that freedom to accomplish economic outcomes far more impressive than when governments attempt to limit choices through policy constraints.

### Uniqueness 1AR

#### Momentum

**Cillizza, 10/25/**12 (Chris, Washington Post, “Is Mitt Romney’s momentum real or fake?” <http://www.washingtonpost.com/blogs/the-fix/wp/2012/10/25/is-mitt-romneys-momentum-real-or-fake/>)

But a look at polling in perhaps the three swingiest states in the country — Florida, Ohio and Virginia — suggest that between the first presidential debate and today, there has been a clear trend in Romney’s favor.¶ In Florida, Romney went from behind by two points on Oct. 3 to ahead by 1.8 points on Wednesday in the Real Clear Politics poll of polls.¶ In Ohio, Romney went from down 5.5 points on Oct. 3 to down 1.7 points on Wednesday.¶ And in Virginia, Romney trailed Obama by 3.5 points on Oct. 3 and, as of Wednesday, the two candidates were deadlocked.¶ Viewed broadly — and with a recognition that a poll of polls is not perfect science — it appears that Romney gained roughly 3.5 points in each of that trio of states over the past 20 days.¶ That, at least in our book, would suggest that Romney has — or at least had — some genuine momentum built off of his strong first debate performance. ¶ But, you could argue, isn’t that “momentum” simply derived — as MacGillis argues — from the media’s decision to flood the zone with coverage of a Romney comeback? ¶ It’s impossible to prove that idea wrong, but to believe in its rightness means that you think the media possesses considerably more power — particularly among low information undecided voters and Republican base voters — than we in fact do. (That’s not to discount the fact that the media does have some power to influence voter perceptions. And, as Jonathan Chait rightly notes in a piece in New York Magazine, the idea that Romney is suddenly and clearly winning the race — and pulling out of North Carolina — is a fallacy that should not be perpetuated by the media.)¶ But there is a difference between casting Romney as the frontrunner and simply giving Romney his due for a strong debate performance that energized his base and gave independents voters more to like. (In the latest Washington Post-ABC tracking poll released Wednesday, 40 percent of independents said they like Romney more after the debates. Just 10 percent said the same of Obama.)

# Round 2 – Neg v Oklahoma LC

## 1nc

### 1nc framework

#### The resolution indicates affs should advocate topical government change

**Ericson 3** (Jon M., Dean Emeritus of the College of Liberal Arts – California Polytechnic U., et al., The Debater’s Guide, Third Edition, p. 4)

The Proposition of Policy: Urging Future Action In policy propositions, each topic contains certain key elements, although they have slightly different functions from comparable elements of value-oriented propositions. 1. An agent doing the acting ---“The United States” in “The United States should adopt a policy of free trade.” Like the object of evaluation in a proposition of value, the agent is the subject of the sentence. 2. The verb should—the first part of a verb phrase that urges action. 3. An action verb to follow should in the should-verb combination. For example, should adopt here means to put a program or policy into action though governmental means. 4. A specification of directions or a limitation of the action desired. The phrase free trade, for example, gives direction and limits to the topic, which would, for example, eliminate consideration of increasing tariffs, discussing diplomatic recognition, or discussing interstate commerce. Propositions of policy deal with future action. Nothing has yet occurred. The entire debate is about whether something ought to occur. What you agree to do, then, when you accept the affirmative side in such a debate is to offer sufficient and compelling reasons for an audience to perform the future action that you propose.

#### Specific, limited resolutions ensure mutual ground which is key to sustainable controversy without sacrificing creativity or openness

**Steinberg & Freeley 8** \*Austin J. Freeley is a Boston based attorney who focuses on criminal, personal injury and civil rights law, AND \*\*David L. Steinberg , Lecturer of Communication Studies @ U Miami, Argumentation and Debate: Critical Thinking for Reasoned Decision Making pp45-

Debate is a means of settling differences, so there must be a difference of opinion or a conflict of interest before there can be a debate. If everyone is in agreement on a tact or value or policy, there is no need for debate: the matter can be settled by unanimous consent. Thus, for example, it would be pointless to attempt to debate "Resolved: That two plus two equals four," because there is simply no controversy about this statement. (Controversy is an essential prerequisite of debate. Where there is no clash of ideas, proposals, interests, or expressed positions on issues, there is no debate. In addition, debate cannot produce effective decisions without clear identification of a question or questions to be answered. For example, general argument may occur about the **broad topic** of illegal immigration. How many illegal immigrants are in the United States? What is the impact of illegal immigration and immigrants on our economy? What is their impact on our communities? Do they commit crimes? Do they take jobs from American workers? Do they pay taxes? Do they require social services? Is it a problem that some do not speak English? Is it the responsibility of employers to discourage illegal immigration by not hiring undocumented workers? Should they have the opportunity- to gain citizenship? Docs illegal immigration pose a security threat to our country? Do illegal immigrants do work that American workers are unwilling to do? Are their rights as workers and as human beings at risk due to their status? Are they abused by employers, law enforcement, housing, and businesses? I low are their families impacted by their status? What is the moral and philosophical obligation of a nation state to maintain its borders? Should we build a wall on the Mexican border, establish a national identification can!, or enforce existing laws against employers? Should we invite immigrants to become U.S. citizens? Surely you can think of many more concerns to be addressed by a conversation about the topic area of illegal immigration. Participation in this "debate" is likely to be emotional and intense. However, it is not likely to be productive or useful without focus on a particular question and identification of a line demarcating sides in the controversy. To be discussed and resolved effectively, controversies must be stated clearly. **Vague understanding** results in unfocused deliberation and poor decisions, frustration, and emotional distress, as evidenced by the failure of the United States Congress to make progress on the immigration debate during the summer of 2007.

Someone disturbed by the problem of the growing underclass of poorly educated, socially disenfranchised youths might observe, "Public schools are doing a terrible job! They are overcrowded, and many teachers are poorly qualified in their subject areas. Even the best teachers can do little more than struggle to maintain order in their classrooms." That same concerned citizen, facing a complex range of issues, might arrive at an unhelpful decision, such as "We ought to do something about this" or. worse. "It's too complicated a problem to deal with." Groups of concerned citizens worried about the state of public education could join together to express their frustrations, anger, disillusionment, and emotions regarding the schools, but without a focus for their discussions, they could easily agree about the sorry state of education **without** finding points of clarity or potential solutions. A gripe session would follow. But if a precise question is posed—such as "What can be done to improve public education?"—then a more profitable area of discussion is opened up simply by placing a focus on the search for a concrete solution step. One or more judgments can be phrased in the form of debate propositions, motions for parliamentary debate, or bills for legislative assemblies. The statements "Resolved: That the federal government should implement a program of charter schools in at-risk communities" and "Resolved: That the state of Florida should adopt a school voucher program" more clearly identify specific ways of dealing with educational problems in a manageable form, suitable for debate. They provide specific policies to be investigated and aid discussants in identifying points of difference.

To have a productive debate, which facilitates effective decision making by directing and placing limits on the decision to be made, the basis for argument should be clearly defined. If we merely talk about "homelessness" or "abortion" or "crime'\* or "global warming" we are likely to have an interesting discussion but not to establish profitable basis for argument. For example, the statement "Resolved: That the pen is mightier than the sword" is debatable, yet fails to provide much basis for clear argumentation. If we take this statement to mean that the written word is more effective than physical force for some purposes, we can identify a problem area: the comparative effectiveness of writing or physical force for a specific purpose.

Although we now have a general subject, we have not yet stated a problem. It is still too broad, too loosely worded to promote well-organized argument. What sort of writing are we concerned with—poems, novels, government documents, website development, advertising, or what? What does "effectiveness" mean in this context? What kind of physical force is being compared—fists, dueling swords, bazookas, nuclear weapons, or what? A more specific question might be. "Would a mutual defense treaty or a visit by our fleet be more effective in assuring Liurania of our support in a certain crisis?" The basis for argument could be phrased in a debate proposition such as "Resolved: That the United States should enter into a mutual defense treatv with Laurania." Negative advocates might oppose this proposition by arguing that fleet maneuvers would be a better solution. This is not to say that debates should completely avoid creative interpretation of the controversy by advocates, or that good debates cannot occur over competing interpretations of the controversy; in fact, these sorts of debates may be very engaging. The point is that debate is best facilitated by the guidance provided by **focus on a particular point of difference**, which will be outlined in the following discussion.

#### Deliberation requires a predetermined subject—they over-determine the rez more than us by assuming debates are the ultimate arbiter of its value as opposed to a means to facilitate clash

Adolf G. **Gundersen,** Associate Professor of Political Science, Texas A&M, **2000**

POLITICAL THEORY AND PARTISAN POLITICS, 2000, p. 104-5. (DRGNS/E625)

Indirect political engagement is perhaps the single most important element of the strategy I am recommending here. It is also the most emblematic, as it results from a fusion of confrontation and separation. But what kind of political engagement might conceivably qualify as being both confrontational and separated from actual political decision-making? There is only one type, so far as I can see, and that is deliberation. Political deliberation is by definition a form of engagement with the collectivity of which one is a member. This is all the more true when two or more citizens deliberate together. Yet deliberation is also a form of political action that **precedes the actual** taking and **implementation** of decisions. It is thus simultaneously connected and disconnected, confrontational and separate. It is, in other words, a form of indirect political engagement. This conclusion, namely, that we ought to call upon deliberation to counter partisanship and thus clear the way for deliberation, looks rather circular at first glance. And, semantically at least, it certainly is. Yet this ought not to concern us very much. Politics, after all, is not a matter of avoiding semantic inconveniences, but of doing the right thing and getting desirable results. In political theory, therefore, the real concern is always whether a circular argument translates into a self-defeating prescription. And here that is plainly not the case, for what I am suggesting is that deliberation can diminish partisanship, which will in turn contribute to conditions amenable to continued or extended deliberation. That "deliberation promotes deliberation" is surely a circular claim, but it is just as surely an accurate description of the real world of lived politics, as observers as far back as Thucydides have documented. It may well be that deliberation rests on certain preconditions. I am not arguing that there is no such thing as a deliberative "first cause." Indeed, it seems obvious to me both that deliberators **require something to deliberate about and that** deliberation **presumes certain institutional structures** and shared values. Clearly something must get the deliberative ball rolling and, to keep it rolling, the cultural terrain must be free of deep chasms and sinkholes. Nevertheless, however extensive and demanding deliberation's preconditions might be, we ought not to lose sight of the fact that, once begun, deliberation tends to be self-sustaining. Just as partisanship begets partisanship, deliberation begets deliberation. If that is so, the question of limiting partisanship and stimulating deliberation are to an important extent the same question.

#### Topical fairness requirements are key to effective dialogue—monopolizing strategy and prep makes the discussion one-sided and subverts any meaningful neg role

**Galloway 7** – professor of communications at Samford University (Ryan, “Dinner And Conversation At The Argumentative Table: Reconceptualizing Debate As An Argumentative Dialogue”, Contemporary Argumentation and Debate, Vol. 28 (2007), ebsco)

Debate as a dialogue sets an argumentative table, where all parties receive a relatively fair opportunity to voice their position. Anything that fails to allow participants to have their position articulated denies one side of the argumentative table a fair hearing. The affirmative side is set by the topic and fairness requirements. While affirmative teams have recently resisted affirming the topic, in fact, the topic selection process is rigorous, taking the relative ground of each topic as its central point of departure.¶ Setting the affirmative reciprocally sets the negative. The negative crafts approaches to the topic consistent with affirmative demands. The negative crafts disadvantages, counter-plans, and critical arguments premised on the arguments that the topic allows for the affirmative team. According to fairness norms, each side sits at a relatively balanced argumentative table.¶ When one side takes more than its share, competitive equity suffers. However, it also undermines the respect due to the other involved in the dialogue. When one side excludes the other, it fundamentally denies the personhood of the other participant (Ehninger, 1970, p. 110). A pedagogy of debate as dialogue takes this respect as a fundamental component. A desire to be fair is a fundamental condition of a dialogue that takes the form of a demand for equality of voice. **Far from** being **a banal request for links** to a disadvantage, fairness is a demand for respect, a demand to be heard, a demand that a voice backed by literally months upon **months of preparation**, research, and critical thinking not be silenced.¶ Affirmative cases that suspend basic fairness norms **operate to exclude** particular negative strategies. Unprepared, one side comes to the argumentative table unable to meaningfully participate in a dialogue. They are unable to “understand what ‘went on…’” and are left to the whims of time and power (Farrell, 1985, p. 114). Hugh Duncan furthers this line of reasoning:¶ Opponents not only tolerate but honor and respect each other because in doing so they enhance their own chances of thinking better and reaching sound decisions. Opposition is necessary because it sharpens thought in action. We assume that argument, discussion, and talk, among free an informed people who subordinate decisions of any kind, because it is only through such discussion that we reach agreement which binds us to a common cause…If we are to be equal…relationships among equals must find expression in many formal and informal institutions (Duncan, 1993, p. 196-197).¶ **Debate compensates for the exigencies of the world by offering a framework that maintains equality for the sake of the conversation** (Farrell, 1985, p. 114).¶ For example, an affirmative case on the 2007-2008 college topic might defend neither state nor international action in the Middle East, and yet claim to be germane to the topic in some way. The case essentially denies the arguments that state action is oppressive or that actions in the international arena are philosophically or pragmatically suspect. Instead of allowing for the dialogue to be modified by the interchange of the affirmative case and the negative response, the affirmative subverts any meaningful role to the negative team, preventing them from offering effective “counter-word” and undermining the value of a meaningful exchange of speech acts. **Germaneness and other substitutes for topical action do not accrue the dialogical benefits** of topical advocacy.

#### Game spaces like debate are distinct from other forms of education and public speaking. There has to be a balance of ground or else one side claims the moral high ground and creates a de facto monologue

**Hanghoj 2008** – PhD, assistant professor, School of Education, University of Aarhus, also affiliated with the Danish Research Centre on Education and Advanced Media Materials, located at the Institute of Literature, Media and Cultural Studies at the University of Southern Denmark (Thorkild, http://static.sdu.dk/mediafiles/Files/Information\_til/Studerende\_ved\_SDU/Din\_uddannelse/phd\_hum/afhandlinger/2009/ThorkilHanghoej.pdf)

Debate games are often based on pre-designed scenarios that include descriptions of issues to be debated, educational goals, game goals, roles, rules, time frames etc. In this way, debate games differ from textbooks and everyday classroom instruction as debate scenarios allow teachers and students to actively imagine, interact and communicate within a domain-specific game space. However, instead of mystifying debate games as a “magic circle” (Huizinga, 1950), I will try to overcome the epistemological dichotomy between “gaming” and “teaching” that tends to dominate discussions of educational games. In short, educational gaming is a form of teaching. As mentioned, education and games represent two different semiotic domains that both embody the three faces of knowledge: assertions, modes of representation and social forms of organisation (Gee, 2003; Barth, 2002; cf. chapter 2). In order to understand the interplay between these different domains and their interrelated knowledge forms, I will draw attention to a central assumption in Bakhtin’s dialogical philosophy. According to Bakhtin, all forms of communication and culture are subject to centripetal and centrifugal forces (Bakhtin, 1981). A centripetal force is the drive to impose one version of the truth, while a centrifugal force involves a range of possible truths and interpretations. This means that any form of expression involves a duality of centripetal and centrifugal forces: “Every concrete utterance of a speaking subject serves as a point where centrifugal as well as centripetal forces are brought to bear” (Bakhtin, 1981: 272). If we take teaching as an example, it is always affected by centripetal and centrifugal forces in the on-going negotiation of “truths” between teachers and students. In the words of Bakhtin: “Truth is not born nor is it to be found inside the head of an individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction” (Bakhtin, 1984a: 110). Similarly, the dialogical space of debate games also embodies centrifugal and centripetal forces. Thus, the election scenario of The Power Game involves centripetal elements that are mainly determined by the rules and outcomes of the game, i.e. the election is based on a limited time frame and a fixed voting procedure. Similarly, the open-ended goals, roles and resources represent centrifugal elements and create virtually endless possibilities for researching, preparing, presenting, debating and evaluating a variety of key political issues. Consequently, the actual process of enacting a game scenario involves a complex negotiation between these centrifugal/centripetal forces that are inextricably linked with the teachers and students’ game activities. In this way, the enactment of The Power Game is a form of teaching that combines different pedagogical practices (i.e. group work, web quests, student presentations) and learning resources (i.e. websites, handouts, spoken language) within the interpretive frame of the election scenario. Obviously, tensions may arise if there is too much divergence between educational goals and game goals. This means that game facilitation requires a balance between focusing too narrowly on the rules or “facts” of a game (centripetal orientation) and a focusing too broadly on the contingent possibilities and interpretations of the game scenario (centrifugal orientation). For Bakhtin, the duality of centripetal/centrifugal forces often manifests itself as a dynamic between “monological” and “dialogical” forms of discourse. Bakhtin illustrates this point with the monological discourse of the Socrates/Plato dialogues in which **the teacher never learns anything new** from the students, despite Socrates’ ideological claims to the contrary (Bakhtin, 1984a). Thus, discourse becomes monologised when “someone who knows and possesses the truth **instructs someone** who is ignorant of it and in error”, where “a thought is either affirmed or repudiated” by the authority of the teacher (Bakhtin, 1984a: 81). In contrast to this, dialogical pedagogy fosters inclusive learning environments that are able to expand upon students’ existing knowledge and collaborative construction of “truths” (Dysthe, 1996). At this point, I should clarify that Bakhtin’s term “dialogic” is both a descriptive term (all utterances are per definition dialogic as they address other utterances as parts of a chain of communication) and a normative term as dialogue is an ideal to be worked for against the forces of “monologism” (Lillis, 2003: 197-8). In this project, I am mainly interested in describing the dialogical space of debate games. At the same time, I agree with Wegerif that “one of the goals of education, perhaps the most important goal, should be dialogue as an end in itself” (Wegerif, 2006: 61).

#### The impact outweighs—deliberative debate models impart skills vital to respond to existential threats

Christian O. **Lundberg 10** Professor of Communications @ University of North Carolina, Chapel Hill, “Tradition of Debate in North Carolina” in Navigating Opportunity: Policy Debate in the 21st Century By Allan D. Louden, p. 311

The second major problem with the critique that identifies a naivety in articulating debate and democracy is that it presumes that the primary pedagogical outcome of debate is speech capacities. But the democratic capacities built by debate are not limited to speech—as indicated earlier, debate builds capacity for critical thinking, analysis of public claims, informed decision making, and better public judgment. If the picture of modem political life that underwrites this critique of debate is a pessimistic view of increasingly labyrinthine and bureaucratic administrative politics, rapid scientific and technological change outpacing the capacities of the citizenry to comprehend them, and ever-expanding insular special-interest- and money-driven politics, it is a puzzling solution, at best, to argue that these conditions warrant giving up on debate. If democracy is open to rearticulation, it is open to rearticulation precisely because as the challenges of modern political life proliferate, the citizenry's capacities can change, which is one of the primary reasons that theorists of democracy such as Ocwey in The Public awl Its Problems place such a high premium on education (Dewey 1988,63, 154). Debate provides an indispensible form of education in the modem articulation of democracy because it builds precisely the skills that allow the citizenry to research and be informed about policy decisions that impact them, to son rhroueh and evaluate the evidence for and relative merits of arguments for and against a policy in an increasingly infonnation-rich environment, and to prioritize their time and political energies toward policies that matter the most to them.

The merits of debate as a tool for building democratic capacity-building take on a special significance in the context of information literacy. John Larkin (2005, HO) argues that one of the primary failings of modern colleges and universities is that they have not changed curriculum to match with the challenges of a new information environment. This is a problem for the course of academic study in our current context, but perhaps more important, argues Larkin, for the future of a citizenry that will need to make evaluative choices against an increasingly complex and multimediatcd information environment (ibid-). Larkin's study tested the benefits of debate participation on information-literacy skills and concluded that in-class debate participants reported significantly higher self-efficacy ratings of their ability to navigate academic search databases and to effectively search and use other Web resources:

To analyze the self-report ratings of the instructional and control group students, we first conducted a multivariate analysis of variance on all of the ratings, looking jointly at the effect of instmction/no instruction and debate topic . . . that it did not matter which topic students had been assigned . . . students in the Instnictional [debate) group were significantly more confident in their ability to access information and less likely to feel that they needed help to do so----These findings clearly indicate greater self-efficacy for online searching among students who participated in (debate).... These results constitute strong support for the effectiveness of the project on students' self-efficacy for online searching in the academic databases. There was an unintended effect, however: After doing ... the project, instructional group students also felt more confident than the other students in their ability to get good information from Yahoo and Google. It may be that the library research experience increased self-efficacy for any searching, not just in academic databases. (Larkin 2005, 144)

Larkin's study substantiates Thomas Worthcn and Gaylcn Pack's (1992, 3) claim that debate in the college classroom plays a critical role in fostering the kind of problem-solving skills demanded by the increasingly rich media and information environment of modernity. Though their essay was written in 1992 on the cusp of the eventual explosion of the Internet as a medium, Worthcn and Pack's framing of the issue was prescient: the primary question facing today's student has changed from how to best research a topic to the crucial question of learning how to best evaluate which arguments to cite and rely upon from an easily accessible and veritable cornucopia of materials.

There are, without a doubt, a number of important criticisms of employing debate as a model for democratic deliberation. But cumulatively, the evidence presented here warrants strong support for expanding debate practice in the classroom as a technology for enhancing democratic deliberative capacities. The unique combination of critical thinking skills, research and information processing skills, oral communication skills, and capacities for listening and thoughtful, open engagement with hotly contested issues argues for debate as a crucial component of a rich and vital democratic life. In-class debate practice both aids students in achieving the best goals of college and university education, and serves as an unmatched practice for creating thoughtful, engaged, open-minded and self-critical students who are open to the possibilities of meaningful political engagement and new articulations of democratic life.

Expanding this practice is crucial, if only because the more we produce citizens that can actively and effectively engage the political process, the more likely we are to produce revisions of democratic life that are necessary if democracy is not only to survive, but to thrive. Democracy faces a myriad of challenges, including: domestic and international issues of class, gender, and racial justice; wholesale environmental destruction and the potential for rapid climate change; emerging threats to international stability in the form of terrorism, intervention and new possibilities for great power conflict; and increasing challenges of rapid globalization including an increasingly volatile global economic structure. More than any specific policy or proposal, an informed and active citizenry that deliberates with greater skill and sensitivity provides one of the best hopes for responsive and effective democratic governance, and by extension, one of the last best hopes for dealing with the existential challenges to democracy [in an] increasingly complex world.

### 1nc interest convergance

#### The interests of the 1ac and dominant elites CONVERGE to form a compromise in the form of a BALLOT—the structural precondition for minority advances is that the AFF benefit the interests of white elites.

**Harpalani ’04**. Vinay Harpalani, professor of interdisciplinary studies in Development at U. Penn, “Simple Justice or Complex Injustice?: American Racial Dynamics and the Ironies of Brown and Grutter,” Penn GSE Perspectives on Urban Education, Volume 3, Number 1, Fall, http://www.urbanedjournal.org/notes/notes0014.html

One of the central tenets of Critical Race Theory is *interest convergence*, the notion that both racism and seemingly anti-racist measures advance the interests of the majority group, White Americans (Delgado & Stefancic, 2001). When social changes occur that benefit people of color (or at least seem to benefit people of color), it is only because the interests of Whites (particularly elite Whites) and people of color (sometimes only particular groups of people of color) have temporarily converged. Thus, social changes that appear to benefit people of color actually have greater benefits for White Americans, and the interests of people of color are served only when they coincide with the interests of White Americans. The idea of interest convergence can be applied to *Brown* and *Grutter* both individually and in relation to one another. The relationship between these two cases also illustrates how socio-political interests can shape the development of racial ideology and discourse. Several ironies are apparent here, as I will illustrate.

#### The structures of white supremacy will RE APPROPRIATE the 1ac—the exchange between debate acknowledging the legitimacy of the 1ac is accepting the current terms of American nationalism—the antiracism advocate must remain blind to the linkage between race and the imperialism of American capital. Interest CONVERGENCE results in interest DIVERGENCE.

**Melamed ’06**. Jodi Melamed, professor of African American Studies Marquette University, “The Spirit of Neoliberalism: From Racial Liberalism to Multicultural Neoliberalism,” Social Text 89, Volume 24, Number 4, Winter, pp. 1-25 at 6

It is important to note that the study’s purview is as much geopolitical as racial. As racial liberalism incorporated antiracism and “the Negro” into the calculations of U.S. governmentality, racial equity became a means to secure U.S. interests. Racial equity was not an end in itself. Consequently, racial epistemology and politics were altered such that state-recognized antiracisms would have to validate culturally powerful notions of the U.S. nation-state and its foremost interests. Because the scope of the political in the postwar United States precisely shields matters of economy from robust democratic review, the suturing of liberal antiracism to U.S. nationalism, which manages, develops, and depoliticizes capitalism by collapsing it with Americanism, results in a situation where “official” antiracist discourse and politics actually limit awareness of global capitalism.

*An American Dilemma* omits from its capacious study practically any mention of black left politics and culture, as Nikhil Singh has recently observed.10 One of its only indications that economy has something to do with racism comes in a discussion of employment discrimination. Thus years before red-baiting would narrow mainstream race politics into what has been called the civil rights compromise, liberal nationalism all on its own, without anticommunism, can be seen to bracket the global political economic critique of race and capitalism that had pervaded anticolonial and antiracist thinking in the first half of the twentieth century.

In short, as racial liberal discourse became hegemonic in the 1950s, not only did race disappear as a referent for the inequality of the historical development of modern capitalism (a referentiality hard-won by earlier antiracisms). Official antiracism now explicitly required the victory and extension of U.S. empire, the motor force of capitalism’s next unequal development. Where placing the United States in the history of European colonialism had energized earlier antiracist movements led by people of color, from the “victory” of racial liberalism over white supremacy onward, official antiracisms in the United States remain under the injunction to take U.S. ascendancy for granted and to remain blind to global capitalism as a race issue.

#### Moments of interest convergence acts as a safety valve for white elites to defuse the possibility of black revolution.

**Lee ’07.** Cynthia Lee, professor of law at George Washington University, “Cultural Convergence: Interest Convergence Theory Meets the Cultural Defense?” Arizona Law Review, Vol. 49, No. 4, Winter [49 Ariz. L. Rev. 911], George Washington University Legal Studies Research Paper No. 248; George Washington University Law School Public Law Research Paper No. 248, p. 922. [PDF Online @] http://ssrn.com/abstract=968754

Bell also posited that the Brown decision helped America in its efforts to persuade African Americans that they were a welcome part of the United States. Bell pointed out that Blacks who had fought for this country in World War II were returning home to widespread racial discrimination. Elite whites worried that in the event of another war, African Americans might be reluctant to fight again. The Brown decision was thus important domestically as a symbol of America’s commitment to equality.52 In later work, Bell elaborated upon his theory, explaining: [Only] when whites perceive that it will be profitable or at least cost-free to serve, hire, admit, or otherwise deal with blacks on a nondiscriminatory basis, they do so. When they fear—accurately or not—that there may be a loss, inconvenience, or upset to themselves or other whites, discriminatory conduct usually follows.53 According to Bell, “racism is a permanent feature of American society, necessary for its stability and for the well-being of the majority of its citizens.”54 Interest convergence explains how Blacks “are able to achieve political gains despite the essentially racist nature of American society.”55 Commenting on Bell’s theory, Charles Ogletree notes that interest convergence works as a safety valve, permitting “short-term gains for African Americans when doing so furthers the short- or long-term goals of the white elite. . . . This is an important check on widespread disaffection that may end in revolution.”56

#### The interest convergence represented by the ballot is temporary at best. The implicit bargain that grants empowerment in exchange for minority support of elite policy demands cannot last—the 1ac results in radicals being rounded up and destroyed because they don’t conform quite enough—this turns the case.

**Delgado ’02.** Richard Delgado, professor of Law at the University of Colorado-Boulder ““Explaining the Rise and Fall of African American Fortunes: Interest Convergence and Civil Rights Gains,” Review of Mary L. Dudziak, Cold War Civil Rights: Race and the Image of American Democracy, Harvard Civil Rights-Civil Liberties Law Review, Volume 37 [37 Harv. C.R.-C.L. L. Rev. 369], pp. 369-387 at 376-7

Dudziak impressively demonstrates that Brown v. Board of Education n62 and the landmark civil rights legislation of the 1960s n63 were a result of interest convergence and Cold War concerns. n64 But these forces not only explain how the Civil Rights era came about; they also provide insight into why the Civil Rights movement came to an end ten years later.

One corollary to the softening of domestic attitudes exemplified by Brown and the 1964 Civil Rights Act was an implicit bargain in which African Americans, in return for civil rights gains, were expected to demonstrate loyalty to America and hostility to communism. They were expected to support foreign wars and purge their ranks of overt communists. n65 Dudziak's own data suggest this implicit bargain. She offers the early examples of singer Josephine Baker n66 and actor-singer Paul Robeson n67 [\*377] to support the implicit understanding--if not overt warning--that if blacks did not support the government, the government would take action.

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With this implicit bargain in mind, Dudziak's thesis can also be used to explain some of the traumatic events of the late 1960 and early 1970s. During this period Black Power (as well as its Chicano counterpart) appeared on the scene, challenging the role assigned to blacks in the implicit bargain. n68 Panthers began reading and quoting from Marx and Lenin. n69 Malcolm X called white people "satanic" and America "the devil-nation." n70

With that bargain breaking down, the government and other elite groups responded in two ways. First, they cracked down on the Panthers with brutal force. n71 Second, to assure that minority leaders were indebted to the government, they instituted the War on Poverty program and enlisted many minority leaders, including former militants like Denver's Corky Gonzales, in that program, giving them federal grants, jobs, and patronage in the form of positions they could fill with their friends. n72 Additionally, at this time mainstream elite groups in the private sector poured millions of dollars into the black community. n73 As a result, black economic well-being surged a second time, but the radical thrust of the Civil Rights movement was largely lost.

**You should refuse to make a deal with the structures of the 1ac. Instead use historically contingent and realistic frameworks to decide on strategies of resistance. Our alternative is the ONLY WAY OUT.**

**Price ‘10.** Patricia L. Price, professor of global and sociological studies at Florida International University, “At the cross roads: critical race theory and critical geographies of race,” Progress in Human Geography 34(2) (2010) pg. 147–174, wiley

The immediate project of CRT was to question the outcomes of Civil Rights era legislation, as well as the underlying approach to understanding and thus redressing the racialized injustice in the United States that framed this legislation(Crenshaw et al., 1995). Early CRT contributors, composed mainly of legal scholars and practicing law- yers, were both troubled by what they viewed as erosion of early momentum of the previous decade of the 1960s, and skeptical of the mindset which held racial equality through the law as the mechanism and the goal of the civil rights movement. Advocating what DerrickBell (1992) termed ‘racial realism’, early CRT focused specifically on the experience of black Americans in what was framed as a pervasively, thoroughly racialized society. Only through stepping entirely outside of the reformist, liberal paradigm of civil rights, and thus coming to terms with the all-pervasiveness of race in the USA, would real change ever be brought about. In her brilliantly poetic key text, The alchemy of race and rights, Patricia Williams (1991) writes ‘this will be so because much of what is spoken in so-called objective, un- mediated voices is in fact mired in hidden subjectivities and unexamined claims that make property of others beyond the self, all the while denying such connections’ (p. 11). Thus CRT shifts paradigms from the goal of equality, to that of social justice through radical reform. ‘In spite of dramatic civil rights movements and periodic victories in the legislatures, black Americans by no means are equal to whites. Racial equality is, in fact, not a realistic goal.

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 Byconstantly aiming for a status that is unobtainable in a perilously racist America, black Americans face frustration and despair. Over time, our persistent quest for integration has hardened into self-defeating rigidity’ (Bell, 1992: 363). Thus, fromits outset and despite the central position of ‘theory’ in its name, CRT has explicitly centralized activism. It is not enough to critique, and thereby intellectually rework, racism; rather, racism must be addressed and redressed through action, what Crenshaw et al. (1995) term ‘a desire not merely to understand the vexed bond between law and racial power but to change it’ (p. xiii, emphasis in original). Many of the scholarly contributions to CRT have been fashioned and sharpened through the actual courtroom practice of law. For this reason, practicing lawyers are found among CRTs major contributors.

### 1nc capitalism

#### Identity politics fracture movements – the aff’s insistence on specific application of policy as a precondition for inclusion in the ‘struggle against oppression’ ignores the commonality of oppression makes Empire’s divide and conquer tactics more effective

**Smith ’95** (Sharon, columnist for Socialist Worker and author of Women’s Liberation and Socialism, Mistaken Identity: or Can Identity Politics Liberate the Oppressed, http://pubs.socialistreviewindex.org.uk/isj62/smith.htm)

Among many people on the left today the Marxist emphasis on the centrality of class and class struggle – as key both to understanding and to transforming society – is widely disparaged. Many who once looked to the working class movement as key to social change have shifted their focus toward the 'new social movements'. This term covers a broad range of movements which originated in the 1960s and 1970s, including those against the oppression of women, blacks and lesbians and gays, as well as those organized around ecology, disarmament and a variety of other issues. Key to this strategy for social change, which has been carried to its logical extreme more recently through the development of 'identity politics,' is the idea that only those experiencing a particular form of oppression can either define it or fight against it. For people newly active on the left, this way of organizing may seem like common sense: it should go without saying that those who are oppressed should fight against their own oppression. Moreover, the prevalence of sexist, racist and anti-gay ideas in society at large makes it sometimes appear as if the bigotry which divides people can never be fully overcome. This pessimistic notion forms the theoretical basis for identity politics. It is assumed that a particular movement must include only those who face a specific form of oppression. To one degree or another, all the other people in society are part of the problem – in some way they benefit from oppression and have an interest in maintaining it. For this same reason it follows that each oppressed group should have its own distinct and separate movement. Such movements therefore tend to be organized on the basis of 'autonomy' or independence – from each other and from the socialist movement. They tend also to be organized independent of any class basis. But this logic is flawed. It would be disastrous, for example, if the fight against fascism in Europe today were limited to only members of those racial groups who are immediately targeted by fascists. The advance of the fascist movement is not only a threat to 'foreign born' workers, but to all workers. To most effectively counter the recent rise of fascists in Europe, all those who oppose the far right, whatever race they happen to be, should be encouraged to join the anti-fascist movement. Any fight against oppression, if it is to succeed, must be based upon building the strongest possible movement. And that can only happen when a movement unites different groups of activists into a common struggle. It is not, as is widely assumed within these political milieu, necessary to face a particular oppression in order to fight against that oppression, any more than it is necessary to be destitute in order to fight against poverty. Many people who do not experience a particular form of oppression can learn to identify with those who do, and can be enlisted as allies in a common struggle. The politics of identity cannot point the way towards building the kind of movement which can actually end oppression. In fact, among existing organizations founded on the basis of identity politics, the tendency has been towards fragmentation and disintegration, rather than growth. More often than not among movements organized on the basis of identity politics the enemy includes 'everyone else' – perceived as an amorphous, backward blob which makes up the rest of society. Instead of seeing the class struggle as a way to overcome oppression, the working class is seen as a barrier to this process. At its heart, identity politics is a rejection of the notion that the working class can be the agent for social change, and a pessimism about the possibility for significant, never mind revolutionary, social transformation. As Stanley Aronowitz argued in his book, The Politics of Identity: *Class, Culture, Social Movements*: ...the historically exclusive focus of class-based movements on a narrow definition of the issues of economic justice has frequently excluded gender, race, and qualitative issues, questions of workers' control over production, and similar problems. The almost exclusive emphasis on narrow quantitative issues has narrowed the political base of labor and socialist movements and made all but inevitable the emergence of social movements which, as often as not, perceived class politics as inimical to their aims.1

#### Focusing onracial subjectivity makes class invisible—failing to take into account these racist relations in the name of economic progress

**Young, Asst Prof of English at Univ of Alabama, Winter 2006**

[Robert, *Putting Materialism Back into Race Theory*, http://www.redcritique.org/WinterSpring2006/puttingmaterialismbackintoracetheory.htm]

Indeed, the discourse of the subject operates as an ideological strategy for fetishizing the black experience and, consequently, it positions black subjectivity beyond the reach of Marxism. For example, in the *Afrocentric Idea*, Asante dismisses Marxism because it is Eurocentric (8), but are the core concepts of Marxism, such as class and mode of production, only relevant for European social formations? Are African and African-American social histories/relations unshaped by class structures? Asante assumes that class hierarchies do not structure African or the African-American social experiences, and this reveals the class politics of Afrocentricity: it makes class invisible. Asante's assumption, which erases materialism, enables him to offer the idealist formulation that the "word creates reality" (70). The political translation of such idealism is not surprisingly very conservative. Asante directs us away from critiquing capitalist institutions, in a manner similar to the ideological protocol of the Million Man March, and calls for vigilance against symbolic oppression. As Asante tellingly puts it, "symbol imperialism, rather than institutional racism, is the major social problem facing multicultural societies" (56). In the realm of African-American philosophy, Howard McGary Jr. also deploys the discourse of the (black) subject to mark the limits of Marxism. For instance, in a recent interview, McGary offers this humanist rejection of Marxism: "I don't think that the levels of alienation experienced by Black people are rooted primarily in economic relations" (Interview 90). For McGary, black alienation exceeds the logic of Marxist theory and thus McGary's idealist assertion that "the sense of alienation experienced by Black people in the US is also rooted in the whole idea of what it means to be a human being and how that has been understood" (Interview 90). McGary confuses causes and effects and then misreads Marxism as a descriptive modality. Marxism is not concerned as much with descriptive accounts, the effects, as much as it is with explanatory accounts. That is, it is concerned with the cause of social alienation because such an explanatory account acts as a guide for praxis. Social alienation is an historical effect and its explanation does not reside in the experience itself; therefore, it needs explanation and such an explanation emerges from the transpersonal space of concepts. In theorizing the specificity of black alienation, McGary reveals his contradictory ideological coordinates. First, he argues that black alienation results from cultural "beliefs".  Then, he suggests that these cultural "norms" and "practices" develop from slavery and Jim Crow, which are fundamentally economic relations for the historically specific exploitation of black people. If these cultural norms endogenously emerge from the economic systems of slavery and Jim Crow, as McGary correctly suggests, then and contrary to McGary's expressed position, black alienation is very much rooted in economic relations. McGary's desire to place black subjectivity beyond Marxism creates contradictions in his text. McGary asserts that the economic structures of slavery and Jim Crow shape cultural norms. Thus in a post-slavery, post-Jim Crow era, there would still be an economic structure maintaining contemporary oppressive norms—from McGary's logic this must be the case. However, McGary remains silent on the contemporary economic system structuring black alienation: capitalism. Apparently, it is legitimate to foreground and critique the historical connection between economics and alienation but any inquiry into the present day connection between economics and alienation is off limits. This other economic structure—capitalism—remains the unsaid in McGary's discourse, and consequently he provides ideological support for capitalism—the exploitative infrastructure which produces and maintains alienation for blacks as well as for all working people. In a very revealing moment, a moment that confirms my reading of McGary's pro-capitalist position, he asserts that "it is possible for African-Americans to combat or overcome this form of alienation described by recent writers without overthrowing capitalism" (20). Here, in a most lucid way, we see the ideological connection between the superstructure (philosophy) and the base (capitalism). Philosophy provides ideological support for capitalism, and, in this instance, we can also see how philosophy carries out class politics at the level of theory (Althusser *Lenin* 18). McGary points out "that Black people have been used in ways that white people have not" (91). His observation may be true, but it does not mean that whites have not also been "used"; yes, whites may be "used" differently, but they are still "used" because that is the logic of exploitative regimes—people are "used", that is to say, their labor is commodified and exchanged for profit. McGary's interview signals what I call an "isolationist" view. This view disconnects black alienation from other social relations; hence, it ultimately reifies race, and, in doing so, suppresses materialist inquiries into the class logic of race. That is to say, the meaning of race is not to be found within its own internal dynamics but rather in dialectical relation to and as an ideological justification of the exploitative wage-labor economy. This isolationist position finds a fuller and, no less problematic, articulation in Charles W. Mills' *The Racial Contract*, a text which undermines the possibility for a transracial transformative political project. Mills evinces the ideological assumptions and consequent politics of the isolationist view in a long endnote to chapter 1. Mills privileges race oppression, but, in doing so, he must suppress other forms of oppression, such as gender and class. Mills acknowledges that there are gender and class relations within the white population, but he still privileges race, as if the black community is not similarly divided along gender and class lines. Hence, the ideological necessity for Mills to execute a double move: he must marginalize class difference within the white community and suppress it within the black community. Consequently, Mills removes the possibility of connecting white supremacy, a political-cultural structure, to its underlying economic base. Mills empiricist framework mystifies our understanding of race. If "white racial solidarity has overridden class and gender solidarity" (138), as he proposes, then what is needed is an explanation of this racial formation. If race is the "identity around which whites have usually closed ranks" (138), then why is the case? Without an explanation, it seems as if white solidarity reflects some kind of metaphysical alliance. White racial solidarity is an historical articulation that operates to defuse class antagonism within white society, and it is maintained and reproduced through discourses of ideology. The race contract provides whites with an imaginary resolution of actual social contradictions, which are not caused by blacks, but by an exploitative economic structure. The race contract enables whites to scapegoat blacks and such an ideological operation displaces any understanding of the exploitative machinery. Hence, the race contract provides a political cover which ensures the ideological reproduction of the conditions of exploitation, and this reproduction further deepens the social contradictions—the economic position of whites becomes more and more depressed by the very same economic system that they help to ideologically reproduce.

#### Thus, we demand rejection of the plan in favor of communal relations of solidarity outside the state to shelter the oppressed from global capitalism

**Only by rejecting capitalism's drive to commodify can we lead to an alternative to capitalism.**

Marcuse, German Philosopher and Professor at Columbia and Harvard, in ’69 [Herbert, member of the Frankfurt School, An Essay on Liberation, p. 85-91]

More recently, the break in the unity of the communist orbit, the triumph of the Cuban revolution, Vietnam, and the "cultural revolution" in China have changed this picture. The possibility of constructing socialism on a truly popular base, without the Stalinist bureaucratization and the danger of a nuclear war as the imperialist answer to the emergence of this kind of socialist power, has led to some sort of common interest between the Soviet Union on the one side and the United States on the other. In a sense, this is indeed the community of interests of the "haves" against the "have nots," of the Old against the New. The "collaborationist" policy of the Soviet Union necessitates the pursuance of power politics which increasingly reduces the prospect that Soviet society, by virtue of its basic institutions alone (abolition of private ownership and control of the means of production: planned economy) is still capable of making the transition to a free society. And yet, the very dynamic of imperialist expansion places the Soviet Union in the other camp: would the effective resistance in Vietnam, and the protection of Cuba be possible without Soviet aid? However, while we reject the unqualified convergence thesis, according to which -at least at present -the assimilation of interests prevails UPOIl the conflict between capitalism and Soviet Socialism, we cannot minimize the essential difference between the latter and the new historical efforts to construct socialism by developing and creating a genuine solidarity between the leadership and the liberated victims of exploitation. The actual may considerably deviate from the ideal, the fact remains that, for a whole generation, "freedom," "socialism," and "liberation" are inseparable from Fidel and Che and the guerrillas -not because their revolutionary struggle could furnish the model for the struggle in the metropoles, but because they have recaptured the truth of these ideas, in the dayto- day fight of men and women for a life as human beings: for a new life. What kind of life? We are still confronted with the demand to state the "concrete alternative." The demand is meaningless if it asks for a blueprint of the specific institutions and relationships which would be those of the new society: they cannot be determined a priori; they will develop, in trial and error, as the new society develops. If we could form a concrete concept of the alternative today, it would not be that of an alternative; the possibilities of the new society are sufficiently "abstract," i.e., removed from and incongruous with the established universe to defy any attempt to identify them in terms of this universe. However, the question cannot be brushed aside by saying that what matters today is the destruction of the old, of the powers that be, making way for the emergence of the new. Such an answer neglects the essential fact that the old is not simply bad, that it delivers the goods, and that people have a real stake in it. There can be societies which are much worse – there are such societies today. The system of corporate capitalism has the right to insist that those who work for its replacement justify their action. But the demand to state the concrete alternatives is justified for yet another reason. Negative thinking draws whatever force it may have from its empirical basis: the actual human condition in the given society, and the "given" possibilities to transcend this condition, to enlarge the realm of freedom. In this sense, negative thinking is by virtue of its own internal concepts "positive": oriented toward, and comprehending a future which is "contained" in the present. And in this containment (which is an important aspect of the general containment policy pursued by the established societies), the future appears as possible liberation. It is not the only alternative: the advent of a long period of "civilized" barbarism, with or without the nuclear destruction, is equally contained in the present. Negative thinking, and the praxis guided by it, is the positive and positing effort to prevent this utter negativity. The concept of the primary, initial institutions of liberation is familiar enough and concrete enough: collective ownership, collective control and planning of the means of production and distribution. This is the foundation, a necessary but not sufficient condition for the alternative: it would make possible the usage of all available resources for the abolition of poverty, which is the prerequisite for the turn from quantity into quality: the creation of a reality in accordance with the new sensitivity and the new consciousness. This goal implies rejection of those policies of reconstruction, no matter how revolutionary, which are bound to perpetuate (or to introduce) the pattern of the unfree societies and their needs. Such false policy is perhaps best summed up in the formula "to catch up with, and to overtake the productivity level of the advanced capitalist countries." What is wrong with this formula is not the emphasis on the rapid improvement of the material conditions but on the model guiding their improvement. The model denies the alternative, the qualitative difference. The latter is not, and cannot be, the result of the fastest possible attainment of capitalist productivity, but rather the development of new modes and ends of production "new" not only (and perhaps not at all) with respect to technical innovations and production relations, but with respect to the different human needs and the different human relationships in working for the satisfaction of these needs. These new relationships would be the result of a "biological" *solidarity* in work and purpose, expressive of a true harmony between social and individual needs and goals, between recognized necessity and free development -the exact opposite of the administered and enforced harmony organized in the advanced capitalist (and socialist?) countries. It is the image of this solidarity as elemental, instinctual, creative force which the young radicals see in Cuba, in the guerrillas, in the Chinese cultural revolution. Solidarity and cooperation: not all their forms are liberating. Fascism and militarism have developed a deadly efficient solidarity. Socialist solidarity is autonomy: selfdetermination begins at home -and that is with every I, and the We whom the I chooses. And this end must indeed appear in the means to attain it, that is to say, in the strategy of those who, within the existing society, work for the new one. If the socialist relationships of production are to be a new way of life, a new Form of life, then their existential quality must show forth, anticipated and demonstrated, in the fight for their realization. Exploitation in all its forms must have disappeared from this fight: from the work relationships among the fighters as well as from their individual relationships. Understanding, tenderness toward each other, the instinctual consciousness of that which is evil, false, the heritage of oppression, would then testify to the authenticity of the rebellion. In short, the economic, political, and cultural features of a classless society must have become the basic needs of those who fight for it. This ingression of the future into the present, this depth dimension of the rebellion accounts, in the last analysis, for the incompatibility with the traditional forms of the political struggle. The new radicalism militates against the centralized bureaucratic communist as well as against the semi-democratic liberal organization. There is a strong element of spontaneity, even anarchism, in this rebellion, expression of the new sensibility, sensitivity against domination: the feeling, the awareness, that the joy of freedom and the need to be free must precede liberation.Therefore the aversion against preestablished Leaders, apparatchiks of all sorts, politicians no matter how leftist. The initiative shifts to small groups, widely diffused, with a high degree of autonomy, mobility, flexibility. To be sure, within the repressive society, and against its ubiquitous apparatus, spontaneity by itself cannot possibly be a radical and revolutionary force. It can become such a force only as the result of enlightenment, education, political practice -in this sense indeed, as a result of organization. The anarchic element is an essential factor in the struggle against domination: preserved but disciplined in the preparatory political action, it will be freed and aufgehoben in the goals of the struggle. Released for the construction of the initial revolutionary institutions, the antirepressive sensibility, allergic to domination, would militate against the prolongation of the "First Phase," that is, the authoritarian bureaucratic development of the productive forces. The new society could then reach relatively fast the level at which poverty could be abolished (this level could be considerably lower than that of advanced capitalist productivity, which is geared to obscene aflluence and waste). Then the development could tend toward a sensuous culture, tangibly contrasting with the gray-on-gray culture of the socialist societies of Eastern Europe. Production would be redirected in defiance of all the rationality of the Performance Principle; socially necessary labor would be diverted to the construction of an aesthetic rather than repressive environment, to parks and gardens rather than highways and parking lots, to the creation of areas of withdrawal rather than massive fun and relaxation. Such redistribution of socially necessary labor (time), incompatible with any society governed by the Profit and Performance Principle, would gradually alter society in all its dimensions -it would mean the ascent of the Aesthetic Principle as Form of the Reality Principle: a culture of receptivity based on the achievements of industrial civilization and initiating the end of its selfpropelling productivity. Not regression to a previous stage of civilization, but return to an imaginary *temps perdu* in the real life of mankind: progress to a stage of civilization where man has learned to ask for the sake of whom or of what he organizes his society; the stage where he checks and perhaps even halts his incessant struggle for existence on an enlarged scale, surveys what has been achieved through centuries of misery and hecatombs of victims, and decides that it is enough, and that it is time to enjoy what he has and what can be reproduced and refined with a minimum of alienated labor: not the arrest or reduction of technical progress, but the elimination of those of its features which perpetuate man's subjection to the apparatus and the intensification of the struggle for existence -to work harder in order to get more of the merchandise that has to be sold. In other words, electrification indeed, and all technical devices which alleviate and protect life, all the mechanization which frees human energy and time, all the standardization which does away with spurious and parasitarian "personalized" services rather than multiplying them and the gadgets and tokens of exploitative affiuence. In terms of the latter (and only in terms of the latter), this would certainly be a regression -but freedom from the rule of merchandise over man is a precondition of freedom. The construction of a free society would create new incentives for work. In the exploitative societies, the so‐called work instinct is mainly the (more or less effectively) introjected necessity to perform productively in order to earn a living. But the life instincts themselves strive for the unification and enhancement of life; in nonrepressive sublimation they would provide the libidinal energy for work on the development of a reality which no longer demands the exploitative repression of the Pleasure Principle. The "incentives" would then be built into the instinctual structure of men. Their sensibility would register, as biological reactions, the difference between the ugly and the beautiful, between calm and noise, tenderness and brutality, intelligence and stupidity, joy and fun, and it would correlate this distinction with that between freedom and servitude. Freud's last theoretical conception recognizes the erotic instincts as work instincts ‐work for the creation of a sensuous environment. The social expression of the liberated work instinct is cooperation, which, grounded in solidarity, directs the organization of the realm of necessity and the development of the realm of freedom. And there is an answer to the question which troubles the minds of so many men of good will: what are the people in a free society going to do? The answer which, I believe, strikes at the heart of the matter was given by a young black girl. She said: for the first time in our life, we shall be free to think about what we are going to do.

### Case

Their speech act doesn’t spill over to change anything but their own minds –

#### a. Structural constraints

**Atchison and Panetta 9** – \*Director of Debate at Trinity University and \*\*Director of Debate at the University of Georgia (Jarrod, and Edward, “Intercollegiate Debate and Speech Communication: Issues for the Future,” The Sage Handbook of Rhetorical Studies, Lunsford, Andrea, ed., 2009, p. 317-334)

The first problem that we isolate is the difficulty of any individual debate to generate community change. Although any debate has the potential to create problems for the community (videotapes of objectionable behavior, etc.), rarely does any one debate have the power to create community-wide change. We attribute this ineffectiveness to the structural problems inherent in individual debates and the collective forgetfulness of the debate community. The structural problems stem from the current tournament format that has remained relatively consistent for the past 30 years. Debaters engage in preliminary debates in rooms that are rarely populated by anyone other than the judge. Judges are instructed to vote for the team that does the best debating, but the ballot is rarely seen by anyone outside the tabulation room. Given the limited number of debates in which a judge actually writes meaningful comments, there is little documentation of what actually transpired during the debate round. During the period when judges interact with the debaters, there are often external pressures (filing evidence, preparing for the next debate, etc.) that restrict the ability of anyone outside the debate to pay attention to the judges’ justification for their decision. Elimination debates do not provide for a much better audience because debates still occur simul- taneously, and travel schedules dictate that most of the participants have left by the later elimination rounds. It is difficult for anyone to substantiate the claim that asking a judge to vote to solve a community problem in an individual debate with so few participants is the best strategy for addressing important problems.

#### b. Competition

**Atchison and Panetta 9** – \*Director of Debate at Trinity University and \*\*Director of Debate at the University of Georgia (Jarrod, and Edward, “Intercollegiate Debate and Speech Communication: Issues for the Future,” The Sage Handbook of Rhetorical Studies, Lunsford, Andrea, ed., 2009, p. 317-334)

The debate community has become more self-reflexive and increasingly invested in attempting to address the problems that have plagued the community from the start. The degrees to which things are considered problems and the appropriateness of different solutions to the problems have been hotly contested, but some fundamental issues, such as diversity and accessibility, have received considerable attention in recent years. This section will address the “debate as activism” perspective that argues that the appropriate site for addressing community problems is individual debates. In contrast to the “debate as innovation” perspective, which assumes that the activity is an isolated game with educational benefits, proponents of the “debate as activism” perspective argue that individual debates have the potential to create change in the debate community and society at large. If the first approach assumed that debate was completely insulated, this perspective assumes that there is no substantive insulation between individual debates and the community at large. From our perspective, using individual debates to create community change is an insufficient strategy for three reasons. First, individual debates are, for the most part, insulated from the community at large. Second, individual debates limit the conversation to the immediate participants and the judge, excluding many important contributors to the debate community. Third, locating the discussion within the confines of a competition diminishes the additional potential for collaboration, consensus, and coalition building.

#### Their narrative strategy harms progressive political strategies

Craig IRELAND American Culture @ Bilkent 02 "The Appeal to Experience and its Consequences" Cultural Critique 52 Fall 2002p.87-88

" Once an arcane philosophical term, experience over the last three decades has become a general buzzword. By the 1970s, experience spilled over into the streets, so to speak, and it has since then become the stuff of programmatic manifestos and has been enlisted as the found from which microstrategies of resistance and subaltern counterhistories can be erected. But for all the blows and counterblows that have carried on tor over"\*three decades between those who appeal to the counterhegemonic potential of experience and those who see such appeals as naive voluntarism, such debates show no signs of abating. On the contrary, they have become yet more strident, as can be seen by Michael Pickering's recent attempt to rehabilitate the viability of the term "experience" for subaltern historiography by turning to E. P. Thompson and Dilthey and, more recently still, by Sonia Kruks's polemical defense of experience for subaltern inquiry by way of a reminder that poststructuralist critics of experience owe much to those very thinkers, from Sartre to Merleau-Ponty, whom they have debunked as if in oedipal rebellion against their begetters. Such debates over experience have so far gravitated around issues of epistemology and agency, pitting those who debunk experience as the stuff of an antiquated philosophy of consciousness against those who argue that subaltern experience provides an enclave against strong structural determination. Lost in such debates, however, have been the potential consequences of appeals to immediate experience as a ground for subaltern agency and specificity. And it is just such potential consequences that will be examined here, These indeed demand our attention, for more is at stake in the appeal to experience than some epistemological faux pas. By so wagering on the perceived immediacy of experience as the evidence for subaltern specificity and counterhegemonic action, appeals to immediate experience, however laudable their goal, end up unwittingly naturalizing what is in fact historical, and, in so doing, they leave the door as wide-open to a progressive politics of identity as to a retreat to neoethnic tribalism. Most alarming about such appeals to experience is not some failure of epistemological nerve – it is instead their ambiguous political and social ramifications. And these have reverberate beyond academia and found an echo in para-academia – so much so that experience has increasingly become the core concept or key word of subaltern groups and the rallying call for what Craig Calhoun calls the “new social movements” in which “experience is made the pure ground of knowledge, the basis of an essentialized standpoint of critical awareness” (468 n.64). The consequences of such appeals to experience can best be addressed not by individually considering disparate currents, but by seeking their common denominator. And in this regard, E.P. Thompson will occupy the foreground. It is safe to say that what started as an altercation between Thompson and Althusser has since spawned academic and para-academic "histories from below" and subaltern cultural inquiries that, for all their differences, share the idea that the identities and counterhistories of the disenfranchised can be buttressed by the specificity of a group's concrete experiences. Much theorizing on experience by certain cultural and historiographical trends, as many have already pointed out, has been but a variation on a persistent Thompsonian theme in which Thompson's "kind of use of experience has the same foundational status if we substitute 'women's' or 'black' or 'lesbian' or 'homosexual' for 'working class'" (Scott, 786)

#### As undeniable truth, the 1ac's description of experience turns into a new form of authoritarian pedagogy. Presenting the self as evidence prevents a critical inquiry into what authorities experience itself. The discourse of experience becomes a trump card-a fascist prohibition on what can be criticized and what stands as absolute.

Rey CHOW ’98 Modern Culture and Media @ BrownEthics After Idealism

In the foregoing pages, I have tried to argue that fascism needs to be understood not only in its negative but more importantly in its positive aspects, and that fascism's production of idealism is a projectional production of luminosity-as-self-evidence, "In an essay entitled "The Evidence of Experience," which does not at first seem to have anything to do with the topic of fascism, Joan Scott has made comparable observations about the use of “experience” in the North American academy today. In the general atmosphere of a felt need to deconstruct universalist: claims about human history, Scott writes, scholars of various disciplines have increasingly turned to personal experience as a means of such deconstruction. However, she argues, by privileging experience as the critical weapon against univeralisms, we are leaving open the question as to what authorizes experience itself. Scott charges that the appeal to experience “as uncontestable evidence and as an originary point of explanation” for historical difference has increasingly replaced the necessary task of exploring “how difference is established, how it operates, now, and in what ways it constitutes subjects who see and act in the world.” For me, what is especially interesting is the manner in which Scott emphasizes the role of vision and visibility throughout her essay. Beginning her discussion with Samuel R. Delany's autobiographical meditation, The Motion of Light in Water, Scott notes that "a metaphor of visibility as literal transparency is crucial to his project." She concludes that, for Delany, "knowledge is gained through vision; vision is a direct apprehension of a world of transparent objects."41 What Scott articulates here is the other side of Virilio's argument about the coterminous nature of visual perception and destruction – that is, the coterminous nature of visual perception and knowledge: "Seeing is the origin of knowing.” While the technology of seeing, or seeing-as-technology, has become an inalienable part of the operation of militarism and fascist propaganda, Scott shows how it has also come to dominate our thinking about identity so much so that visibility and luminosity are the conditions toward which accounts of difference and alternative histories derived from personal experience” now aspire. This kind of aspiration, Scott implies, is an aspiration toward the self-evidence of the self’s (personal) experience. The self as evidence this means that the self, like the Stalin myth in Soviet cinema, is so transparent, so shone through with light, that it simply is without need for further argument about its history or what Scott calls its “discursive character.”

## 2nc

### Case

#### Making the personal political backfires as a strategy against racism

Collins, professor of sociology at the University of Cinncinnati, 1997 (Patricia Hill, Fighting Words, p. 135-136)

In this sense, postmodern views of power that overemphasize hegemony and local politics provide a seductive mix of appearing to challenge oppression while secretly believing that such efforts are doomed. Hegemonic power appears as ever expanding and invading. It may even attempt to “annex” the counterdiscourses that have developed, oppositional discourses such as Afrocentrism, postmodernism, feminism, and Black feminist thought. This is a very important insight. However, there is a difference between being aware of the power of one’s enemy and arguing that such power is so pervasive that resistance will, at best, provide a brief respite and, at worst, prove ultimately futile. This emphasis on power as being hegemonic and seemingly absolute, coupled with a belief in local resistance as the best that people can do, flies in the face of actual, historical successes. African-Americans, women, poor people, and others have achieved results through social movements, revolts, revolutions, and other collective social action against government, corporate, and academic structures. As James Scott queries, “What remains to be explained…is why theories of hegemony…have…retained an enourmous intellectual appeal to social scientists and historians” (1990, 86). Perhaps for colonizers who refuse, individualized, local resistance is the best that they can envision. Overemphasizing hegemony and stressing nihilism not only does not resist injustice but participates in its manufacture. Views of power grounded exclusively in notions of hegemony and nihilism are not only pessimistic, they can be dangerous for members of historically marginalized groups. Moreover, the emphasis on local versus structural institutions makes it difficult to examine major structures such as racism, sexism, and other structural forms of oppression. Social theories that reduce heirarchical power relations to the level of representation, performance, or constructed phenomena not only emphasize the likelihood that resistance will fail in the face of a pervasive hegemonic presence, they also reinforce perceptions that local, individualized micropolitics constitutes the most effective terrain of struggle. This emphasis on the local dovetails nicely with increasing emphasis on the “personal” as a source of power and with parallel attention to subjectivity. If politics becomes reduced to the “personal,” decentering relations of ruling in academia and other bureaucratic structures seems increasingly unlikely. As Rey Chow opines, “What these intellectuals are doing is robbing the terms of oppression of their critical and oppositional import, and thus depriving the oppressed of even the vocabulary of protest and rightful demand” (1993, 13).

#### The system only need make its next argument for oppression with black voices in order to successfully refashion the 1AC as a tool for immiseration

Gur-ze-ev, 98 - Senior Lecturer Philosophy of Education at Haifa, (Ilan, “Toward a nonrepressive critical pedagogy,” Educational Theory, Fall 48, <http://haifa.academia.edu/IlanGurZeev/Papers/117665/Toward_a_Nonreperssive_Critical_Pedagogy>)

From this perspective, the consensus reached by the reflective subject taking part in the dialogue offered by Critical Pedagogy is naive, especially in light of its declared anti-intellectualism on the one hand and its pronounced glorification of "feelings", "experience", and self-evident knowledge of the group on the other. Critical Pedagogy, in its different versions, claims to inhere and overcome the foundationalism and transcendentalism of the Enlightenment's emancipatory and ethnocentric arrogance, as exemplified by ideology critique, psychoanalysis, or traditional metaphysics. Marginalized feminist knowledge, like the marginalized, neglected, and ridiculed knowledge of the Brazilian farmers, as presented by Freire or Weiler, is represented as legitimate and relevant knowledge, in contrast to its representation as the hegemonic instrument of representation and education. This knowledge is portrayed as a relevant, legitimate and superior alternative to hegemonic education and the knowledge this represents in the center. It is said to represent an identity that is desirable and promises to function "successfully". However, neither the truth value of the marginalized collective memory nor knowledge is cardinal here. "Truth" is replaced by knowledge whose supreme criterion is its self-evidence, namely the potential productivity of its creative violence, while the dialogue in which adorers of "difference" take part is implicitly represented as one of the desired productions of this violence. My argument is that the marginalized and repressed self-evident knowledge has no superiority over the self-evident knowledge of the oppressors. Relying on the knowledge of the weak, controlled, and marginalized groups, their memory and their conscious interests, is no less naive and dangerous than relying on hegemonic knowledge. This is because the critique of Western transcendentalism, foundationalism, and ethnocentrism declines into uncritical acceptance of marginalized knowledge, which becomes foundationalistic and ethnocentric in presenting "the truth", "the facts", or ''the real interests of the group" - even if conceived as valid only for the group concerned. This position cannot avoid vulgar realism and naive positivism based on "facts" of self-evident knowledge ultimately realized against the self-evidence of other groups.

### framework

#### The argument that our framework is systemically bias is a self-serving assertion to sidestep clash—all of their reasons not to defend the topic can be appropriated by actors with opposite goals

**Talisse 2005** – philosophy professor at Vanderbilt (Robert, Philosophy & Social Criticism, 31.4, “Deliberativist responses to activist challenges”) \*note: gendered language in this article refers to arguments made by two specific individuals in an article by Iris Young

My call for a more detailed articulation of the second activist challenge may be met with the radical claim that I have begged the question. It may be said that my analysis of the activist’s challenge and my request for a more rigorous argument presume what the activist denies, namely, that arguments and reasons operate independently of ideology. Here the activist might begin to think that he made a mistake in agreeing to engage in a discussion with a deliberativist – his position throughout the debate being that one should decline to engage in argument with one’s opponents! He may say that of course activism seems lacking to a deliberativist, for the deliberativist measures the strength of a view according to her own standards. But the activist rejects those standards, claiming that they are appropriate only for seminar rooms and faculty meetings, not for real-world politics. Consequently the activist may say that by agreeing to enter into a discussion with the deliberativist, he had unwittingly abandoned a crucial element of his position. He may conclude that the consistent activist avoids arguing altogether, and communicates only with his comrades. Here the discussion ends.

However, the deliberativist has a further consideration to raise as his discursive partner departs for the next rally or street demonstration. The foregoing debate had presumed that there is but one kind of activist and but one set of policy objectives that activists may endorse. Yet Young’s activist is opposed not only by deliberative democrats, but also by persons who also call themselves ‘activists’ and who are committed to a set of policy objectives quite different from those endorsed by this one activist. Once these opponents are introduced into the mix, the stance of Young’s activist becomes more evidently problematic, even by his own standards.

To explain: although Young’s discussion associates the activist always with politically progressive causes, such as the abolition of the World Trade Organization (109), the expansion of healthcare and welfare programs (113), and certain forms of environmentalism (117), not all activists are progressive in this sense. Activists on the extreme and racist Right claim also to be fighting for justice, fairness, and liberation. They contend that existing processes and institutions are ideologically hegemonic and distorting. Accordingly, they reject the deliberative ideal on the same grounds as Young’s activist. They advocate a program of political action that operates outside of prevailing structures, disrupting their operations and challenging their legitimacy. They claim that such action aims to enlighten, inform, provoke, and excite persons they see as complacent, naïve, excluded, and ignorant. Of course, these activists vehemently oppose the policies endorsed by Young’s activist; they argue that justice requires activism that promotes objectives such as national purity, the disenfranchisement of Jews, racial segregation, and white supremacy. More importantly, they see Young’s activist’s vocabulary of ‘inclusion’, ‘structural inequality’, ‘institutionalized power’, as fully in line with what they claim is a hegemonic ideology that currently dominates and systematically distorts our political discourses.21

The point here is not to imply that Young’s activist is no better than the racist activist. The point rather is that Young’s activist’s arguments are, in fact, adopted by activists of different stripes and put in the service of a wide range of policy objectives, each claiming to be just, liberatory, and properly inclusive.22 In light of this, there is a question the activist must confront. How should he deal with those who share his views about the proper means for bringing about a more just society, but promote a set of ends that he opposes?

It seems that Young’s activist has no way to deal with opposing activist programs except to fight them or, if fighting is strategically unsound or otherwise problematic, to accept a Hobbesian truce. This might not seem an unacceptable response in the case of racists; however, the question can be raised in the case of any less extreme but nonetheless opposed activist program, including different styles of politically progressive activism. Hence the deliberativist raises her earlier suspicions that, in practice, activism entails a politics based upon interestbased power struggles amongst adversarial factions.

#### Enemy combatant prosecutions prove—switch side inculcates skills and values that give teeth to progressive advocates

**DAWG 2007** – Schenley Park Debate Authors Working Group, including Gordon Mitchell (June, Communication & Critical/Cultural Studies, 4.2, p221-225)

It is our position, however, that rather than acting as a cultural technology expanding American exceptionalism, switch-side debating originates from a civic attitude that serves as a bulwark against fundamentalism of all stripes. Several prominent voices reshaping the national dialogue on homeland security have come from the academic debate community and draw on its animating spirit of critical inquiry. For example, Georgetown University law professor Neal Katyal served as lead plaintiff ’s counsel in Hamdan, which challenged post-9/11 enemy combat definitions. 12 The foundation for Katyal’s winning argument in Hamdan was laid some four years before, when he collaborated with former intercollegiate debate champion Laurence Tribe on an influential Yale Law Journal addressing a similar topic. Tribe won the National Debate Tournament in 1961 while competing as an undergraduate debater for Harvard University. Thirty years later, Katyal represented Dartmouth College at the same tournament and finished third. The imprint of this debate training is evident in Tribe and Katyal’s contemporary public interventions, which are characterized by meticulous research, sound argumentation, and a staunch commitment to democratic principles. Katyal’s reflection on his early days of debating at Loyola High School in Chicago’s North Shore provides a vivid illustration. ‘‘I came in as a shy freshman with dreams of going to medical school. Then Loyola’s debate team opened my eyes to a different world: one of argumentation and policy.’’ As Katyal recounts, ‘‘the most important preparation for my career came from my experiences as a member of Loyola’s debate team.’’14 The success of former debaters like Katyal, Tribe, and others in challenging the dominant dialogue on homeland security points to the efficacy of academic debate as a training ground for future advocates of progressive change. Moreover, a robust understanding of the switch-side technique and the classical liberalism which underpins it would help prevent misappropriation of the technique to bolster suspect homeland security policies. For buried within an inner-city debater’s files is a secret threat to absolutism: the refusal to be classified as ‘‘with us or against us,’’ the embracing of intellectual experimentation in an age of orthodoxy, and reflexivity in the face of fundamentalism. But by now, the irony of our story should be apparent\*the more effectively academic debating practice can be focused toward these ends, the greater the proclivity of McCarthy’s ideological heirs to brand the activity as a ‘‘weapon of mass destruction.’’

#### Attacks on social location are equal parts fallacy and discrimination. Vote for arguments, not speakers

**Kotzee, 10** – Department of Social Policy and Education, Birkbeck College, University of London (Ben, “Poisoning the Well and Epistemic Privilege,” Argumentation, SpringerLink)

In his paper “Poisoning the Well” (2006), Walton seeks to establish that the fallacy of poisoning the well is not a species of argumentum ad hominem as is commonly supposed, but can be a fallacy in its own right. Walton cites four instances of the poisoning the well in action and shows how the traditional analysis of the poisoning the well (see, for instance, Copi and Cohen 1998: 169 and Walton 1998) leaves features of this attack poorly explained. Rather than being an illegitimate attack on the person making the argument, Walton (2006) attempts to show why the poisoning the well is at once more subtle and dangerous: the poisoning the well is not a purely personal attack so much as a dialectical tactic to silence an opponent or prevent his views from being considered seriously. In this paper, a further example of the poisoning the well is outlined and a question is asked of Walton’s analysis. While in broad agreement with Walton’s approach, it is argued that a full explanation of the fallacy must take into account a body of approaches to do with the politics of identity according to which privileged social groups have a systematically distorted view on reality that will affect how they argue about social issues like race or gender. Starting from Walton’s view that the poisoning the well is a form of silencing, this paper seeks to defend and expand Walton’s analysis by establishing when making the social background of one’s opponent relevant to a debate is legitimate and when it is not. Pertinently, it is held that facts regarding someone’s gender or race can never in itself be a good ground to shift a debate’s focus in this way. 2 Walton on Poisoning the Well 2.1 The Traditional View According to Walton (2006: 288), the fallacy of poisoning the well is traditionally thought to be a sub-type of the bias form of the argumentum ad hominem (making the poisoning the well a sub-sub-type of the argumentum ad hominem on the traditional view.)1 In advancing the bias form of the argumentum ad hominem, the person employing it implies that his opponent draws his conclusions motivated not by genuine enquiry about a certain issue, but by self-interested advocacy and that the conclusions therefore should not be trusted. Whereas in an ordinary accusation of bias it is implied that someone has an interest in some discreet matter, in the poisoning the well sub-type of the bias attack, it is implied that someone is permanently or globally biased because of some fact regarding his social background. Take this (classic) example: The Cardinal Newman Argument Charles Kingsley, attacking the famous Catholic intellectual John Henry Cardinal Newman, argued thus: Cardinal Newman’s claims were not to be trusted because, as a Roman Catholic Priest, (Kingsley alleged) Newman’s first loyalty was not to the truth. (Copi and Cohen 1998: 169; Walton 2006: 275) What is wrong with Kingsley’s attack according to traditional fallacy theory is much the same as is wrong with ad hominem attacks generally: poisoning the well is fallacious, because casting aspersions on the arguer—while potentially effective in persuading an audience—is beside the point as far as the likely truth of the victim’s conclusion//////

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is concerned. According to Walton’s new analysis of the poisoning the well, however, what is the matter is something else. What is wrong with the poisoning the well is not that it is a personal attack, but that it is an illegitimate tactic deployed to silence an opponent or prevent his views being taken seriously in the first place. In offering this—new—analysis of poisoning the well, Walton not only turns accepted fallacy theory on its head, but also amends his own previously held views (see, for instance, Walton 1998) on the poisoning the well. In arguing that the dialectical analysis of the poisoning the well is to be preferred, Walton (2006: 275–82) cites a number of examples of poisoning the well attacks in action. The Abortion Argument An argument advanced by a woman during a debate on abortion in the Canadian House of Commons in 1979: I wish it were possible for men to get really emotionally involved in this question. It is really impossible for the man, for whom it is impossible to be in this situation, to really see it from the woman’s point of view. That is why I am concerned that there are not more women in this House available to speak about this from the woman’s point of view. The Black Alienation Argument An argument advanced by a black man against a white critic during a debate on black alienation: You’re not a black man, so anything you have to say on the subject of black alienation is of no interest to me. You just can’t know what you’re talking about. The Armoured Vehicles Argument An argument advanced on a message board on the world wide web regarding an academic’s views about the use of light armoured vehicles in Iraq: Just read his piece on LAVs in Iraq and… I wonder why we care what he thinks on topics of this nature. Reading his bio I saw nothing about him serving in the military. Yes, he’s a smart guy, and has some alphabet soup after his name these days, but really, what does he know about the proper uses of LAVs? I don’t see where he served as a tank/track commander or served period. Why are we wasting time listening to someone who doesn’t seem to have been there and done that? He wrote a book on Maneuver Warfare? Where did he learn how to maneuver? The Gulf War Argument An argument in the Netherlands in 1990: A retired Major General argues in front of his relatives that the Dutch government must give more substantial support for the Allied efforts in the Gulf Area. “We ought to send ground forces,” so he claims. His grandson retorts: “It’s all very well for you to talk, Grandpa! You don’t have to go there.” Using these four examples, Walton shows why the poisoning the well is not a species of ad hominem argument. To be an ad hominem argument, the argument must be an attack on an arguer’s character (Walton 2006: 288). However, in the examples that Walton highlights, there is no personal attack on an individual’s character. Take the abortion and black alienation arguments: there the attack is not directed against a specific man or against a specific white person, rather the attack is against men and white people as such or, at best, against a certain person as representative of the groups “men” and “white people”. This is most clear in the Gulf War argument: in that argument it is not that the grandson asserts his grandfather is of bad character at all—personal badness aside, the grandfather is just in no position to comment on sending Dutch troops to war, according to his grandson. For Walton, the intention in the poisoning the well cases is not so much to discredit a person’s argument by casting aspersions on his character, but to suggest that for the person in question to enter into a discussion regarding the issue in question is illegitimate. Walton holds that this “diffusion effect” is an essential characteristic of the poisoning the well and describes the dialectical situation like this:

## 1nr

### AT: Perm

#### Links to movement tradeoff – 1NC Albayati says that American influence crowds out grassroots efforts to build socialism – That’s zero-sum with the alt.

Jeremy **Brecher et al**, Expert on labor, world trade and economics, Globalization from Below, The Nation, December 4, <http://www.thenation.com/docprem.mhtml?i=20001204&s=brecher> **2000**

Some within the movement advocate centralized global government as the solution to corporate globalization; others seek a reassertion of national or even local sovereignty. But the problems of globalization are unlikely to be solved either by some central global authority or by national or local autarky. The real choice today is between a globalization from above that disempowers people at every level and a globalization from below that expands self-government not only at a global level but at regional, national and local levels as well. The movement faces many potential pitfalls, and given the power of those it opposes, there is no guarantee that it can actually modify globalization enough to preserve people and environment, let alone to build a decent world order. But that is more likely to be achieved by means of a movement that is unified across the boundaries of countries, issues and constituencies than by any other approach. Globalization from above made ordinary people around the world seem powerless; globalization from below has the potential to change the power equation. Rarely in human history have ordinary people had such an opportunity to transform the world for the better.

#### If you include our argument but ignore it, the ballot functions as a politics of self-subalternization. The judge is encouraged to found a vacuous solidarity with the Other by valorizing the material deprivation portrayed in their speeches. This strategy amounts to nothing more than a sham renunciation authorized by the same structures of power that produce alterity in the first place, turning the case at a higher level of analysis.

**Chow ’93.** Rey Chow, Andrew W. Mellon Professor of the Humanities at Brown, Writing Diaspora: Tactics of Intervention in Contemporary Cultural Studies, p. 10-11

The Orientalist has a special sibling whom I will, in order to highlight her significance as a kind of representational agency, call the Maoist. Arif Dirlik, who has written extensively on the history of political movements in twentieth-century China, sums up the interpretation of Mao Zedong commonly found in Western Marxist analyses in terms of a "Third Worldist fantasy"—"a fantasy of Mao as a Chinese reincarnation of Marx who fulfilled the Marxist premise that had been betrayed in the West."16 The Maoist was the phoenix which arose from the ashes of the great disillusionment with Western culture in the 1960s and which found hope in the Chinese Communist Revolution.17 In the 1970s, when it became possible for Westerners to visit China as guided and pampered guests of the Beijing establishment, Maoists came back with reports of Chinese society's absolute, positive difference from Western society and of the Cultural Revolution as "the most important and innovative example of Mao's concern with the pursuit of egalitarian, populist, and communitarian ideals in the course of economic modernization" (Harding, p. 939). At that time, even poverty in China was regarded as "spiritually ennobling, since it meant that [the] Chinese were not possessed by the wasteful and acquisitive consumerism of the United States" (Harding, p. 941). Although the excessive admiration of the 1970s has since been replaced by an oftentimes equally excessive denigration of China, the Maoist is very much alive among us, and her significance goes far beyond the China and East Asian fields. Typically, the Maoist is a cultural critic who lives in a capitalist society hut who is fed up with capitalism—a cultural critic, in other words, who wants a social order opposed to the one that is supporting her own undertaking. The Maoist is thus a supreme example of the way desire works: What she wants is always located in the other, resulting in an identification with and valorization of that which she is not/does not have. Since what is valorized is often the other's deprivation—"having" poverty or "having" nothing—the Maoist's strategy becomes in the main a rhetorical renunciation of the material power that enables her rhetoric.

#### Focus on the black-white binary excludes analysis of racism that affects other oppressed populations. Omission of this analysis is a reason to reject their scholarship.

**Perea, 1997**—Professor of Law at the University of Florida [Juan F. Perea, "The Black/White Binary Paradigm of Race: The "Normal Science" of American Racial Thought," Oct. 5, 1997, JSTOR]

Paradigms of race shape our understanding of race and our definition of racial problems. The most pervasive and powerful paradigm of race in the United States is the Black/White binary paradigm. I define this paradigm as the conception that race in America consists, either exclusively or primarily, of only two constituent racial groups, the Black and the White. Many scholars of race reproduce this paradigm when they write and act as though only the Black and the White races matter for purposes of discussing race and social policy with regard to race. The mere recognition that "other people of color" exist, without care- ful attention to their voices, their histories, and their real presence, is merely a reassertion of the Black/White paradigm. If one conceives of race and racism as primarily of concern only to Blacks and Whites, and understands "other people of color" only through some unclear anal- ogy to the "real" races, this just restates the binary paradigm with a slight concession to demographics. My assertion is that our shared understanding of race and racism is essentially limited to this Black/White binary paradigm.27 This paradigm defines, but also limits, the set of problems that may be recognized in racial discourse. Kuhn's notion of "normal science," which further articulates the paradigm and seeks to solve the problems perceivable because of the paradigm, also applies to "normal research" on race. Given the Black/White paradigm, we would expect to find that much research on race is concerned with understanding the dynamics of the Black and White races and attempting to solve the problems between Blacks and Whites. Within the paradigm, the relevant material facts are facts about Blacks and Whites. In addition, the paradigm dictates that all other racial identities and groups in the United States are best understood through the Black/White binary paradigm. Only a few writers even recognize that they use a Black/White paradigm as the frame of reference through which to understand racial relations.28 Most writers simply assume the importance and correctness of the paradigm, and leave the reader grasping for whatever significance descriptions of the Black/White relationship have for other people of color. As I shall discuss, because the Black/White binary paradigm is so widely accepted, other racialized groups like Latinos/as, Asian Americans, and Native Americans are often marginal- ized or ignored altogether. As Kuhn writes, "those that will not fit the box are often not seen at all."29

#### The exclusion of Latinos, Asian Americans and Native Americans in the Black/White paradigm plays into white domination

**Bowman 1- prof of law @MSU, JD from Duke**

(Kristi, Duke Law Journal “The New Face of School Desegregation,” http://www.law.duke.edu/shell/cite.pl?50+Duke+L.+J.+1751)

White privilege is reinforced when racial and ethnic groups are conceptualized not as White, African American, Latino, Asian American, Native American, etc., but instead as White or Non-White. Acknowledgement of differences among groups disappears in a White-Non-White paradigm, because instead of allowing racial or ethnic groups to identify themselves by what they are,238 all Non- [\*pg 1787] White groups are explicitly identified by what they are not, and only by reference to whiteness. Although aspects of a specific Non-White group might be easier to identify than "White culture," this occurs because White culture is mainstream culture. The culture of a specific Non-White group appears distinctive because it deviates from the norm. Professor Martha Mahoney notes that a term such as "racially identifiable" in the context of housing and urban development generally refers "to locations that are racially identifiably black."239 The same is true in the context of education: racially identifiable means racially identifiably Non-White. The White-Non-White paradigm reinforces the power dynamic of the acted and the acted upon, of presence and absence, of the defining and the defined. The power that Whites receive from their unearned privilege in the White-Non-White duality "is, in fact, permission to escape [the debate of race] or to dominate."240 When federal courts reinforce this dynamic in the name of school desegregation, they perpetuate the normalized, mainstream practices and institutions that reinforce racial inequality. It is often these practices and institutions that are most damaging in terms of perpetuating oppression because they are not usually questioned. They are conceptualized as just normal.241 In contemporary school desegregation jurisprudence, Whites are normalized, and all Non-Whites are collapsed into the category of "other." Like African Americans, Latinos have been the victims of state-sanctioned educational segregation;242 but if courts gave attention to the present differences between African Americans and Latinos, courts' remedial orders would likely be structured differently. As will be discussed below, the recognition of Latinos and African Americans as distinct groups that continue to suffer different harms is easily within reach.

# Round 3 – Aff v Idaho State CI

## 1ac

### 1AC Plan – with S-PRISM

#### The United States federal government should substantially increase loan guarantees for integral fast reactors using the S-PRISM design.

### Proliferation

#### Advantage 1: Prolif

#### Nuclear power construction is likely worldwide – Inaction on IFRs is killing US leadership and ability to influence prolif

**Shuster 11** [Joseph Shuster, founder of Minnesota Valley Engineering and Chemical Engineer, 9-8-2011, "Response to Draft Report From Obama’s Blue Ribbon Commission (BRC) on America’s Nuclear Future dated July 29, 2011," Beyond Fossil Fools]

Contrary to the commission’s declarations on the matter, the U.S. is in danger of losing its once ¶ strong nuclear leadership. As a result we would have less to say about how nuclear materials are ¶ to be managed in the world and that could expose the U.S. to some inconvenient if not downright ¶ dangerous consequences. China is now building a large pilot plant said to be identical to our ¶ successful EBR-II plant that proved the design of the IFR. Meanwhile in the U.S. after complete ¶ success, EBR II was shut down, not for technical reasons but for political reasons during the ¶ Clinton administration, a decision destined to be one of the worst in our nation’s history.¶ Much of the world is already committed to a nuclear future with some countries eagerly waiting ¶ to license the American version of Generation IV Fast Reactors—the IFR. We still have the best ¶ IFR technology in the world but have squandered much of our lead, partly by allowing a largely ¶ unqualified commission two years of useless deliberation. What we really did was give our ¶ competitors an additional two years to catch up.

#### IFR restores leadership on nuclear issues – key to contain proliferation

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "IFR FaD context – the need for U.S. implementation of the IFR," 2/18/10) http://bravenewclimate.com/2010/02/18/ifr-fad-context/-http://bravenewclimate.com/2010/02/18/ifr-fad-context/

ON THE NEED FOR U.S. IMPLEMENTATION OF THE INTEGRAL FAST REACTOR¶ The IFR ties into a very big picture — international stability, prevention of war, and avoiding “proliferation” (spread) of nuclear weapons.¶ – The need for energy is the basis of many wars, including the ones we are engaged in right now (Iraq and Afghanistan). If every nation had enough energy to give its people a decent standard of living, that reason for conflict would disappear.¶ – The only sustainable energy source that can provide the bulk of the energy needed is nuclear power.¶ – The current need is for more thermal reactors — the kind we now use.¶ – But for the longer term, to provide the growing amount of energy that will be needed to maintain civilization, the only proven way available today is with fast-reactor technology.¶ – The most promising fast-reactor type is the IFR – metal-fueled, sodium-cooled, with pyroprocessing to recycle its fuel.¶ – Nobody knows yet how much IFR plants would cost to build and operate. Without the commercial-scale demo of the IFR, along with rationalization of the licensing process, any claims about costs are simply hand-waving guesses.¶ \* \* \* \*¶ Background info on proliferation (of nuclear weapons). Please follow the reasoning carefully.¶ – Atomic bombs can be made with highly enriched uranium (90% U-235) or with good-quality plutonium (bomb designers want plutonium that is ~93% Pu-239).¶ – For fuel for an LWR, the uranium only has to be enriched to 3 or 4% U-235.¶ – To make a uranium bomb you don’t need a reactor — but you do need access to an enrichment facility or some other source of highly enriched uranium…¶ – Any kind of nuclear reactor can be used to make weapons-quality plutonium from uranium-238, but the uranium has to have been irradiated for only a very short period. In other words, nobody would try to make a plutonium weapon from ordinary spent fuel, because there are easier ways to get plutonium of much better quality.¶ – Plutonium for a weapon not only has to have good isotopic quality, it also has to be chemically uncontaminated. Thus the lightly irradiated fuel has to be processed to extract the plutonium in a chemically pure form. But mere possession of a reactor is not sufficient for a weapons capability — a facility using a chemical process called PUREX is also needed.¶ – Regardless of how many reactors a country has, it cannot have a weapons capability unless it has either the ability to enrich uranium or to do PUREX-type fuel reprocessing.¶ – Therefore, the spread of weapons capability will be strongly inhibited if the only enrichment and reprocessing facilities are in countries that already have a nuclear arsenal.¶ – But that can only happen if countries with reactors (and soon that will be most of the nations of the world) have absolutely ironclad guarantees that they can get the fuel they need even if they can’t make their own, regardless of how obnoxious their political actions might be.¶ – Such guarantees will have to be backed up by some sort of international arrangement, and that can only come to pass if there is effective leadership for the laborious international negotiations that will have to take place. (For a relevant discussion, see here)¶ – At present, the only nation that has a realistic potential to be such a leader is the United States.¶ – But a country cannot be such a leader in the political arena unless it is also in the technological forefront.¶ – The United States used to be the reactor-technology leader, but it abandoned that role in 1994 when it terminated the development of the IFR.¶ – Since then, other nations — China, India, Japan, South Korea, Russia, France — have proceeded to work on their own fast-reactor versions, which necessarily will involve instituting a fuel-processing capability.¶ – Thus the United States is being left behind, and is rapidly losing its ability to help assure that the global evolution of the technology of nuclear energy proceeds in a safe and orderly manner.¶ – But maybe it’s not too late yet. After all, the IFR is the fast-reactor technology with the post promise (for a variety of reasons), and is ready for a commercial-scale demonstration to settle some uncertainties about how to scale up the pyroprocess as needed, to establish better limits on the expected cost of production units, and to develop an appropriate, expeditious licensing process.¶ – Such a demo will require federal seed money. It’s time to get moving.

#### Transition to IFRs create a global proliferation resistant fuel cycle

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "Q%26A on Integral Fast Reactors – safe, abundant, non-polluting power," 9/18/10) <http://bravenewclimate.com/2010/09/18/ifr-fad-7/-http://bravenewclimate.com/2010/09/18/ifr-fad-7/>

Thermal reactors with reprocessing would do at least a little better.¶ Recycling (it would be with the PUREX process, or an equivalent) could stretch the U-235 supply another few decades—but remember the consequences: growing stockpiles of plutonium, pure plutonium streams in the PUREX plants, and the creation of 100,000-year plutonium mines.¶ If you’re going to talk about “PUREX” and “plutonium mines” you should say what they are. First, what’s PUREX?¶ It’s a chemical process developed for the nuclear weapons program, to separate plutonium from everything else that comes out of a reactor. Weapons require very pure plutonium, and that’s what PUREX delivers. The pyroprocess used in the IFR is very different. It not only does not, it cannot, produce plutonium with the chemical purity needed for weapons.¶ Why do you keep referring to “chemical” purity?¶ Because chemical and isotopic quality are two different things. Plutonium for a weapon has to be pure chemically. Weapons designers also want good isotopic quality—that is, they want at least 93% of their plutonium to consist of the isotope Pu- 239. A chemical process does not separate isotopes.¶ I see. Now, what about the “plutonium mines?”¶ When spent fuel or vitrified reprocessing waste from thermal reactors is buried, the result is a concentrated geological deposit of plutonium. As its radioactivity decays, those deposits are sources of raw material for weapons, becoming increasingly attractive over the next 100,000 years and more (the half-life of Pu-239 being 24,000 years).¶ You listed, back at the beginning, some problems that the IFR would ameliorate. A lot of those problems are obviously related to proliferation of nuclear weapons.¶ Definitely. For instance, although thermal reactors consume more fuel than they produce, and thus are not called “breeders,” they inescapably are prolific breeders of plutonium, as I said. And that poses serious concerns about nuclear proliferation. And proliferation concerns are even greater when fuel from thermal reactors is recycled, since the PUREX method is used. IFRs have neither of those drawbacks.¶ Why does it seem that there is more proliferation-related concern about plutonium than about uranium? Can’t you make bombs from either?¶ Yes. The best isotopes for nuclear explosives are U-235, Pu- 239, and U-233. Only the first two of those, however, have been widely used. All the other actinide isotopes, if present in appreciable quantity, in one way or another complicate the design and construction of bombs and degrade their performance. Adequate isotopic purity is therefore important, and isotopic separation is much more difficult than chemical separation. Even so, with plutonium of almost any isotopic composition it is technically possible to make an explosive (although designers of military weapons demand plutonium that is at least 93% Pu-239), whereas if U-235 is sufficiently diluted with U-238 (which is easy to do and hard to undo), the mixture cannot be used for a bomb.¶ High-quality plutonium is the material of choice for a large and sophisticated nuclear arsenal, while highly enriched uranium would be one of the easier routes to a few crude nuclear explosives.¶ So why the emphasis on plutonium?¶ You’re asking me to read people’s minds, and I’m not good at that. Both uranium and plutonium are of proliferation concern.¶ Where is the best place for plutonium?¶ Where better than in a reactor plant—particularly an IFR facility, where there is never pure plutonium (except some, briefly, when it comes in from dismantled weapons), where the radioactivity levels are lethal, and where the operations are done remotely under an inert, smothering atmosphere? Once enough IFRs are deployed, there never will need to be plutonium outside a reactor plant—except for the then diminishing supply of plutonium left over from decades of thermal-reactor operation.¶ How does the IFR square with U.S. policy of discouraging plutonium production, reprocessing and use?¶ It is entirely consistent with the intent of that policy—to render plutonium as inaccessible for weapons use as possible. The wording of the policy, however, is now obsolete.¶ How so?¶ It was formulated before the IFR’s pyroprocessing and electrorefining technology was known—when “reprocessing” was synonymous with PUREX, which creates plutonium of the chemical purity needed for weapons. Since now there is a fuel cycle that promises to provide far-superior management of plutonium, the policy has been overtaken by events.¶ Why is the IFR better than PUREX? Doesn’t “recycling” mean separation of plutonium, regardless of the method?¶ No, not in the IFR—and that misunderstanding accounts for some of the opposition. The IFR’s pyroprocessing and electrorefining method is not capable of making plutonium that is pure enough for weapons. If a proliferator were to start with IFR material, he or she would have to employ an extra chemical separation step.¶ But there is plutonium in IFRs, along with other fissionable isotopes. Seems to me that a proliferator could take some of that and make a bomb.¶ Some people do say that, but they’re wrong, according to expert bomb designers at Livermore National Laboratory. They looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible—far, far harder than using today’s reactor-grade plutonium.¶ So? Why wouldn’t they use chemical separation?¶ First of all, they would need a PUREX-type plant—something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium—of any isotopic quality—this is probably the all-time, hands-down hardest.¶ The Long Term¶ Does the plutonium now existing and being produced by thermal reactors raise any proliferation concerns for the long term?¶ It certainly does. As I said earlier, burying the spent fuel from today’s thermal reactors creates geological deposits of plutonium whose desirability for weapons use is continually improving. Some 30 countries now have thermal-reactor programs, and the number will grow. To conceive of that many custodial programs being maintained effectively for that long is a challenge to the imagination. Since the IFR can consume plutonium, it can completely eliminate this long-term concern.¶ Are there other waste-disposal problems that could be lessened?¶ Yes. Some constituents of the waste from thermal reactors remain appreciably radioactive for thousands of years, leading to 10,000-year stability criteria for disposal sites. Waste disposal would be simpler if that time frame could be shortened. With IFR waste, the time of concern is less than 500 years.¶ What about a 1994 report by the National Academy of Sciences? The Washington Post said that the NAS report “denounces the idea of building new reactors to consume plutonium.”¶ That characterization of the report is a little strong, but it is true that the members of the NAS committee seem not to have been familiar with the plutonium-management potential of the IFR. They did, however, recognize the “plutonium mine” problem. They say (Executive Summary, p.3):¶ Because plutonium in spent fuel or glass logs incorporating high-level wastes still entails a risk of weapons use, and because the barrier to such use diminishes with time as the radioactivity decays, consideration of further steps to reduce the long-term proliferation risks of such materials is required, regardless of what option is chosen for [near-term] disposition of weapons plutonium. This global effort should include continued consideration of more proliferation-resistant nuclear fuel cycles, including concepts that might offer a long-term option for nearly complete elimination of the world’s plutonium stocks. The IFR, obviously, is just such a fuel cycle—a prime candidate for “continued consideration.”

#### That institutional support manages global nonproliferation

**Bengelsdorf and McGoldrick**, **07** [currently a Principal with the consulting firm of Bengelsdorf, McGoldrick, and Associates, held numerous senior positions in the U.S. government, including the Energy Department and its predecessor agencies, the State Department, and the U.S. Mission to the IAEA. Among his appointments, he served as the director of both key State and Energy Department offices that are concerned with international nuclear and nonproliferation affairs. Throughout his career, Mr. Bengelsdorf contributed significantly to the development and implementation of U.S. international fuel cycle and nonproliferation policies, having participated in several White House and National Security Council studies. He was involved in the negotiation of numerous bilateral and multilateral nuclear and nonproliferation agreements, including the development of full-scope IAEA safeguards (INFCIRC/153) to implement the Nuclear, THE U.S. DOMESTIC CIVIL NUCLEAR INFRASTRUCTURE AND U.S. NONPROLIFERATION POLICY A White Paper Presented by the American Council on Global Nuclear Competitiveness May 2007, <http://www.nuclearcompetitiveness.org/images/COUNCIL_WHITE_PAPER_Final.pdf>]

The health of the U.S. civil nuclear infrastructure can have an important bearing in a variety of ways on the ability of the United States to advance its nonproliferation objectives. During the Atoms for Peace Program and until the 1970s, the U.S. was the dominant supplier in the international commercial nuclear power market, and it exercised a strong leadership role in shaping the global nonproliferation regime. In those early days, the U.S. also had what was essentially a monopoly in the nuclear fuel supply market. This capability, among others, allowed the U.S. to promote the widespread acceptance of nonproliferation norms and restraints, including international safeguards and physical protection measures, and, most notably, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The United States concluded agreements for cooperation in peaceful nuclear energy with other states, which require strict safeguards, physical protection and other nonproliferation controls on their civil nuclear programs. Today due to its political, military and economic position in the world, the United States continues to exercise great weight in nonproliferation matters. However, the ability of the United States to promote its nonproliferation objectives through peaceful nuclear cooperation with other countries has declined**.** The fact that no new nuclear power plant orders have been placed in over three decades has led to erosion in the capabilities of the U.S. civil nuclear infrastructure. Moreover, during the same period, the U.S. share of the global nuclear market has declined significantly, and several other countries have launched their own nuclear power programs and have become major international suppliers in their own right. It is highly significant that all but one of the U.S. nuclear power plant vendors and nuclear fuel designers and manufactures for light water reactors have now been acquired by their non-U.S. based competitors. Thus, while the U.S. remains a participant in the international market for commercial nuclear power, it no longer enjoys a dominant role as it did four decades ago. To the extent that U.S. nuclear plant vendors and nuclear fuel designers 2 and manufacturers are able to reassert themselves on a technical and commercial basis, opportunities for U.S. influence with respect to nuclear nonproliferation can be expected to increase. However, the fact that there are other suppliers that can now provide plants and nuclear fuel technology and services on a competitive commercial basis suggests that the U.S. will have to work especially hard to maintain and, in some cases, rebuild its nuclear infrastructure, if it wishes to exercise its influence in international nuclear affairs. The influence of the United States internationally could be enhanced significantly if the U.S. is able to achieve success in its Nuclear Power 2010 program and place several new orders in the next decade and beyond. There is a clear upsurge of interest in nuclear power in various parts of the world. As a consequence, if the U.S. aspires to participate in these programs and to shape them in ways that are most conducive to nonproliferation, it will need to promote the health and viability of the American nuclear infrastructure. Perhaps more importantly, if it wishes to exert a positive influence in shaping the nonproliferation policies of other countries, it can do so more effectively by being an active supplier to and partner in the evolution of those programs. Concurrent with the prospective growth in the use of nuclear power, the global nonproliferation regime is facing some direct assaults that are unprecedented in nature. International confidence in the effectiveness of nuclear export controls was shaken by the disclosures of the nuclear operations of A.Q. Khan. These developments underscore the importance of maintaining the greatest integrity and effectiveness of the nuclear export conditions applied by the major suppliers. They also underscore the importance of the U.S. maintaining effective policies to achieve these objectives. Constructive U.S. influence will be best achieved to the extent that the U.S. is perceived as a major technological leader, supplier and partner in the field of nuclear technology. As the sole superpower, the U.S. will have considerable, on-going influence on the international nonproliferation regime, regardless of how active and successful it is in the nuclear export market. However, the erosion of the U.S. nuclear infrastructure has begun to weaken the ability of the U.S. to participate actively in the international nuclear market. If the U.S. becomes more dependent on foreign nuclear suppliers or if it leaves the international 3 nuclear market to other suppliers, the ability of the U.S. to influence nonproliferation policy will diminish. It is, therefore, essential that the United States have vibrant nuclear reactor, enrichment services, and spent fuel storage and disposal industries that can not only meet the needs of U.S. utilities but will also enable the United States to promote effective safeguards and other nonproliferation controls through close peaceful nuclear cooperation with other countries. U.S. nuclear exports can be used to influence other states’ nuclear programs through the nonproliferation commitments that the U.S. requires. The U.S. has so-called consent rights over the enrichment, reprocessing and alteration in form or content of the nuclear materials that it has provided to other countries, as well as to the nuclear materials that are produced from the nuclear materials and equipment that the U.S. has supplied. Further, the ability of the U.S. to develop improved and advanced nuclear technologies will depend on its ability to provide consistent and vigorous support for nuclear R&D programs that will enjoy solid bipartisan political support in order that they can be sustained from one administration to another. As the U.S. Government expends taxpayer funds on the Nuclear Power 2010 program, the Global Nuclear Energy Partnership, the Generation IV initiative and other programs, it should consider the benefit to the U.S. industrial base and to U.S. non-proliferation posture as criteria in project design and source selection where possible. Finally, the ability of the United States to resolve its own difficulties in managing its spent fuel and nuclear wastes will be crucial to maintaining the credibility of the U.S. nuclear power program and will be vital to implementing important new nonproliferation initiatives designed to discourage the spread of sensitive nuclear facilities to other countries.

#### We’re on the brink of rapid prolif – access to tech is inevitable and multilateral institutions fail

**CFR 12** [CFR 7-5-2012, "The Global Nuclear Nonproliferation Regime," Council on Foreign Relations]

Nuclear weapons proliferation, whether by state or nonstate actors, poses one of the greatest threats to international security today. Iran's apparent efforts to acquire nuclear weapons, what amounts to North Korean nuclear blackmail, and the revelation of the A.Q. Khan black market nuclear network all underscore the far-from-remote possibility that a terrorist group or a so-called rogue state will acquire weapons of mass destruction or materials for a dirty bomb.¶ The problem of nuclear proliferation is global, and any effective response must also be multilateral. Nine states (China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States) are known or believed to have nuclear weapons, and more than thirty others (including Japan, Germany, and South Korea) have the technological ability to quickly acquire them. Amid volatile energy costs, the accompanying push to expand nuclear energy, growing concerns about the environmental impact of fossil fuels, and the continued diffusion of scientific and technical knowledge, access to dual-use technologies seems destined to grow.¶ In the background, a nascent global consensus regarding the need for substantial nuclear arms reductions, if not complete nuclear disarmament, has increasingly taken shape. In April 2009, for instance, U.S. president Barack Obama reignited global nonproliferation efforts through a landmark speech in Prague. Subsequently, in September of the same year, the UN Security Council (UNSC) unanimously passed Resolution 1887, which called for accelerated efforts toward total nuclear disarmament. In February 2012, the number of states who have ratified the Comprehensive Test Ban Treaty increased to 157, heightening appeals to countries such as the United States, Israel, and Iran to follow suit.¶ Overall, the existing global nonproliferation regime is a highly developed example of international law. Yet, despite some notable successes, existing multilateral institutions have failed to prevent states such as India, Pakistan, and North Korea from "going nuclear," and seem equally ill-equipped to check Iran as well as potential threats from nonstate, terrorist groups. The current framework must be updated and reinforced if it is to effectively address today's proliferation threats, let alone pave the way for "the peace and security of a world without nuclear weapons."

#### Proliferation will be rapid and escalate – kills deterrence stability

**Horowitz, 2009**

[April, Michael, Department of Political Science, University of Pennsylvania, Philadelphia, “The Spread of Nuclear Weapons,” journal of conflict resolution, vol 53, no 2]

Learning as states gain experience with nuclear weapons is complicated. While to some extent, nuclear acquisition might provide information about resolve or capabil-  ities, it also generates uncertainty about the way an actual conflict would go—given  the new risk of nuclear escalation—and uncertainty about relative capabilities. Rapid proliferation may especially heighten uncertainty given the potential for reasonable  states to disagree at times about the quality of the capabilities each possesses.2 What  follows is an attempt to describe the implications of inexperience and incomplete  information on the behavior of nuclear states and their potential opponents over time.  Since it is impossible to detail all possible lines of argumentation and possible  responses, the following discussion is necessarily incomplete. This is a first step.  The acquisition of nuclear weapons increases the confidence of adopters in their  ability to impose costs in the case of a conflict and the expectations of likely costs if  war occurs by potential opponents. The key questions are whether nuclear states  learn over time about how to leverage nuclear weapons and the implications of that  learning, along with whether actions by nuclear states, over time, convey information  that leads to changes in the expectations of their behavior—shifts in uncertainty—  on the part of potential adversaries.  Learning to Leverage?  When a new state acquires nuclear weapons, how does it influence the way the  state behaves and how might that change over time? Although nuclear acquisition  might be orthogonal to a particular dispute, it might be related to a particular secu-  rity challenge, might signal revisionist aims with regard to an enduring dispute, or  might signal the desire to reinforce the status quo.  This section focuses on how acquiring nuclear weapons influences both the new  nuclear state and potential adversaries. In theory, system wide perceptions of nuclear  danger could allow new nuclear states to partially skip the early Cold War learning  process concerning the risks of nuclear war and enter a proliferated world more cog-  nizant of nuclear brinksmanship and bargaining than their predecessors. However,  each new nuclear state has to resolve its own particular civil–military issues surrounding operational control and plan its national strategy in light of its new capa-  bilities. Empirical research by Sagan (1993), Feaver (1992), and Blair (1993)  suggests that viewing the behavior of other states does not create the necessary tacit  knowledge; there is no substitute for experience when it comes to handling a nuclear  arsenal, even if experience itself cannot totally prevent accidents. Sagan contends  that civil–military instability in many likely new proliferators and pressures generated by the requirements to handle the responsibility of dealing with nuclear weapons  will skew decision making toward more offensive strategies (Sagan 1995). The ques-  tions surrounding Pakistan’s nuclear command and control suggest there is no magic  bullet when it comes to new nuclear powers’ making control and delegation decisions (Bowen and Wolvén 1999).  Sagan and others focus on inexperience on the part of new nuclear states as a key  behavioral driver. Inexperienced operators and the bureaucratic desire to “justify”  the costs spent developing nuclear weapons, combined with organizational biases  that may favor escalation to avoid decapitation—the “use it or lose it” mind-set—  may cause new nuclear states to adopt riskier launch postures, such as launch on  warning, or at least be perceived that way by other states (Blair 1993; Feaver 1992;  Sagan 1995).3  Acquiring nuclear weapons could alter state preferences and make states more  likely to escalate disputes once they start, given their new capabilities.4 But their  general lack of experience at leveraging their nuclear arsenal and effectively communicating nuclear threats could mean new nuclear states will be more likely to  select adversaries poorly and to find themselves in disputes with resolved adver-  saries that will reciprocate militarized challenges. The “nuclear experience” logic also suggests that more experienced nuclear states  should gain knowledge over time from nuclearized interactions that helps leaders  effectively identify the situations in which their nuclear arsenals are likely to make  a difference. Experienced nuclear states learn to select into cases in which their com-  parative advantage, nuclear weapons, is more likely to be effective, increasing the  probability that an adversary will not reciprocate.  Coming from a slightly different perspective, uncertainty about the consequences  of proliferation on the balance of power and the behavior of new nuclear states on  the part of their potential adversaries could also shape behavior in similar ways (Schelling 1966; Blainey 1988). While a stable and credible nuclear arsenal communicates clear information about the likely costs of conflict, in the short term,  nuclear proliferation is likely to increase uncertainty about the trajectory of a war,  the balance of power, and the preferences of the adopter.

#### Prolif is uneven – small arsenals don’t solve

Narang, 12 [VIPIN NARANG is an Assistant Professor of Political Science at MIT and member of MIT's Security Studies Program. He received his Ph.D. from the Department Journal of Conflict Resolution July 9, 2012 0022002712448909, p. sage Journals]

Conclusion¶ These findings have important implications for our understanding of nuclear deterrence and nuclear proliferation. First, they overturn a central belief in international relations and nuclear deterrence theory that the acquisition of even a minimal nuclear capability radically improves a regional state's ability to deter conventional conflict. The Cold War experience left it unclear as to what it precisely takes to deter conflict. The regional nuclear powers, however, which have had to face constrained decisions about how to allocate their deterrent power, illustrate that states must explicitly orient their nuclear forces to deter conventional conflict in order to expe- rience reduced attacks. The mere possession of nuclear weapons or even second- strike forces alone seems incapable of providing systematic deterrence against con- ventional attacks. There is no magical deterrent benefit against conventional conflict generated by existential, catalytic, or assured retaliatory postures.¶ To reap a significant deterrent effect against conventional conflict, regional states must—for better or worse—explicitly orient their nuclear forces to do so by adopting an asymmetric escalation posture. This posture undoubtedly carries with it other sig- nificant risks, such as severe command and control pressures and an attendant increase in the risk of inadvertent nuclear use (Sagan 1995). Furthermore, states with this posture have strong incentives to undermine the so-called nuclear tabooin order to keep their nuclear threats credible and may do so in ways that risk their own, or international, security (Tannenwald 2008). However, the findings in this article pro- vide a strong clue as to why states may be willing to run these risks: the significant deterrence benefit that this posture provides. All of this suggests that, theoretically, scholars should cease treating nuclear weapons states as equivalent. The fact that nuclear powers have adopted widely varying nuclear postures that have radically dif- ferent effects on international conflict calls for a revision to our thinking about how conflict can be deterred with nuclear weapons. ror policy makers, these findings suggest that, in addition to addressing a state s initial march toward nuclear weapons, more attention ought to be paid to how regional states operationalize their nuclear forces once they cross the threshold. If it is nuclear posture, not simply nuclear possession, that generates the patterns of regional conflict around a particular regional nuclear power, practitioners may need to reassess their expectations of the frequency and character of conflict in regions with nuclear powers. It also means that the march toward nuclearization, while important, is not the only process that can be targeted by nonproliferation efforts. Even after a regional power has obtained nuclear weapons, the international commu- nity may be able to shape a state's choice of posture. For example, the perceived availability of the United States as a patron state is critical to the selection of the cat- alytic posture. In other instances, there might also be good reasons and ways to push a regional power that is tempted to adopt an asymmetric escalation posture to adopt an assured retaliation posture instead, and minimize the emphasis it places on nuclear weapons for its day-to-day conventional defense (Sechser and Fuhrmann, n.d.).¶ The fundamental point is that nuclear postures matter. Nuclear weapons may deter, but they deter unequally**.** Moreover, both theoretically and empirically, it seems to take more to deter conventional conflict than is generally appreciated. This finding ought to influence how we think about the emerging nuclear landscape and about what it means for international conflict.¶

#### Quantitative analysis shows nuclearization increases conflict risk – South Asia example

Kapur in ‘7 (S. Paul, Associate Prof. Strategic Research Department @ Naval War College, “Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia”, p. 169-171)

In this study, I have sought to determine the effects that India's and Pakistan's acquisition of nuclear weapons has had on the South Asian security environment, focusing specifically on proliferation's impact on conventional military stability in the region. I first showed, through a quantitative analysis of the historical record, that a positive correlation exists between progressing nuclear proliferation and militarized disputes in the region. I explained this correlation between proliferation and conventional instability through case studies that closely examined Indo-Pakistani conventional military behavior during three periods of time during the proliferation process: a nonnuclear period from 1972 through 1989; a de facto nuclear period from 1990 through May 1998; and an overt nuclear period from June 1998 through 2002.

I argued that conventional conflict became more frequent and severe as proliferation progressed because of India's and Pakistan's territorial preferences and relative military capabilities. Pakistan's conventional military weakness vis-a-vis India and its revisionist preferences regarding the territorial division of Kashmir created strong incentives for conventional Pakistani aggression. This was the case for two reasons. First, nuclear weapons, by deterring all-out Indian conventional retaliation, enabled the Pakistanis physically to challenge territorial boundaries in Kashmir. Second, the danger of conventional hostilities escalating to the nuclear level drew international attention, potentially enabling Pakistan to secure outside mediation of the Kashmir dispute and to achieve a more favorable territorial settlement in Kashmir than it could have gotten by itself.

India's conventional strength and status quo preferences regarding the territorial division of Kashmir, by contrast, meant that the acquisition of nuclear weapons did not create direct incentives for India to become more conventionally aggressive or to alter its military behavior in any significant manner. This was the case because the Indian government was largely satisfied on the issue of Kashmir and did not seek to alter territorial boundaries in the region. Therefore, the Indians had little motivation to engage in cross-border aggression, with or without nuclear weapons. In addition, because India was conventionally stronger than Pakistan, the acquisition of nuclear weapons did not enable the Indians to undertake any aggression that they could not have launched earlier with purely conventional forces. Thus, we saw increasingly aggressive Pakistani behavior as proliferation progressed, while nuclear weapons did not have much direct impact on Indian behavior—though, by encouraging Pakistani adventurism, nuclear weapons did drive India to adopt increasingly forceful approaches to dealing with Pakistan.

In the case studies, I demonstrated this logic's impact on the Indo-Pakistani security relationship since 1972. Specifically, I showed that the first, nonnuclear time period from 1972 through 1989 was relatively peaceful, with 186 of 216 months completely free of militarized conflict. I argued that this was the case for two main reasons. First, the Indian government was satisfied with the territorial division of the subcontinent after its victory in the Bangladesh War and had no reason to undertake any aggression against Pakistan. Second, although Pakistani leaders were dissatisfied with the division of the subcontinent following the Bangladesh War, in its weakened state, Pakistan could not risk action to alter territorial boundaries and thus generally avoided confrontation with India.

I showed that the second, de facto nuclear time period was considerably more volatile than the nonnuclear period, with militarized disputes occurring over five times more frequently than they did from 1972 through 1989. I argued that this decreased stability resulted largely from Pakistan's support for the anti-Indian insurgency in Kashmir. This involvement in the insurgency was encouraged by Pakistan's de facto nuclear weapons capacity, which enabled Pakistan to pursue a low-intensity conflict strategy in Kashmir while insulated from all-out Indian conventional retaliation.

I showed that during the third, overt nuclear time period, the frequency of militarized Indo-Pakistani disputes increased nearly 14 percent beyond what it had been during the de facto nuclear period. Additionally, conflict during the overt period escalated above the hostility levels reached in either the nonnuclear or the de facto nuclear periods, crossing the threshold of outright war in 1999. I explained that the overt acquisition of nuclear weapons gave the Pakistan government even greater confidence in its ability to alter the territorial status quo in Kashmir through conventional aggression without fear of full-scale Indian retaliation. Furthermore, Pakistani leaders believed that conflict between two openly nuclear powers would attract international attention to and mediation of the Kashmir dispute, possibly resulting in a settlement superior to any that Pakistan could have secured on its own.

The case studies thus explained the positive correlation between progressing nuclear proliferation and increased conventional conflict identified in the first section of this study and made clear the importance of territorial preferences and military capabilities to determining nuclear proliferation's impact on the behavior of new nuclear states. In the sections that follow, I discuss the theoretical and policy implications of these findings.

#### Extinction.

Krieger, ‘9

[David, Pres. Nuclear Age Peace Foundation and Councilor – World Future Council, “Still Loving the Bomb After All These Years”, 9-4, https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger]

Jonathan Tepperman’s article in the September 7, 2009 issue of Newsweek, “Why Obama Should Learn to Love the Bomb,” provides a novel but frivolous argument that nuclear weapons “may not, in fact, make the world more dangerous….” Rather, in Tepperman’s world, “The bomb may actually make us safer.” Tepperman shares this world with Kenneth Waltz, a University of California professor emeritus of political science, who Tepperman describes as “the leading ‘nuclear optimist.’” Waltz expresses his optimism in this way: “We’ve now had 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Actually, there were a number of proxy wars between nuclear weapons states, such as those in Korea, Vietnam and Afghanistan, and some near disasters, the most notable being the 1962 Cuban Missile Crisis. Waltz’s logic is akin to observing a man falling from a high rise building, and noting that he had already fallen for 64 floors without anything bad happening to him, and concluding that so far it looked so good that others should try it. Dangerous logic! Tepperman builds upon Waltz’s logic, and concludes “that all states are rational,” even though their leaders may have a lot of bad qualities, including being “stupid, petty, venal, even evil….” He asks us to trust that rationality will always prevail when there is a risk of nuclear retaliation, because these weapons make “the costs of war obvious, inevitable, and unacceptable.” Actually, he is asking us to do more than trust in the rationality of leaders; he is asking us to gamble the future on this proposition. “The iron logic of deterrence and mutually assured destruction is so compelling,” Tepperman argues, “it’s led to what’s known as the nuclear peace….” But if this is a peace worthy of the name, which it isn’t, it certainly is not one on which to risk the future of civilization. One irrational leader with control over a nuclear arsenal could start a nuclear conflagration, resulting in a global Hiroshima. Tepperman celebrates “the iron logic of deterrence,” but deterrence is a theory that is far from rooted in “iron logic.” It is a theory based upon threats that must be effectively communicated and believed. Leaders of Country A with nuclear weapons must communicate to other countries (B, C, etc.) the conditions under which A will retaliate with nuclear weapons. The leaders of the other countries must understand and believe the threat from Country A will, in fact, be carried out. The longer that nuclear weapons are not used, the more other countries may come to believe that they can challenge Country A with impunity from nuclear retaliation. The more that Country A bullies other countries, the greater the incentive for these countries to develop their own nuclear arsenals. Deterrence is unstable and therefore precarious. Most of the countries in the world reject the argument, made most prominently by Kenneth Waltz, that the spread of nuclear weapons makes the world safer. These countries joined together in the Nuclear Non-Proliferation Treaty (NPT) to prevent the spread of nuclear weapons, but they never agreed to maintain indefinitely a system of nuclear apartheid in which some states possess nuclear weapons and others are prohibited from doing so. The principal bargain of the NPT requires the five NPT nuclear weapons states (US, Russia, UK, France and China) to engage in good faith negotiations for nuclear disarmament, and the International Court of Justice interpreted this to mean complete nuclear disarmament in all its aspects. Tepperman seems to be arguing that seeking to prevent the proliferation of nuclear weapons is bad policy, and that nuclear weapons, because of their threat, make efforts at non-proliferation unnecessary and even unwise. If some additional states, including Iran, developed nuclear arsenals, he concludes that wouldn’t be so bad “given the way that bombs tend to mellow behavior.” Those who oppose Tepperman’s favorable disposition toward the bomb, he refers to as “nuclear pessimists.” These would be the people, and I would certainly be one of them, who see nuclear weapons as presenting an urgent danger to our security, our species and our future. Tepperman finds that when viewed from his “nuclear optimist” perspective, “nuclear weapons start to seem a lot less frightening.” “Nuclear peace,” he tells us, “rests on a scary bargain: you accept a small chance that something extremely bad will happen in exchange for a much bigger chance that something very bad – conventional war – won’t happen.” But the “extremely bad” thing he asks us to accept is the end of the human species. Yes, that would be serious. He also doesn’t make the case that in a world without nuclear weapons, the prospects of conventional war would increase dramatically. After all, it is only an unproven supposition that nuclear weapons have prevented wars, or would do so in the future. We have certainly come far too close to the precipice of catastrophic nuclear war. As an ultimate celebration of the faulty logic of deterrence, Tepperman calls for providing any nuclear weapons state with a “survivable second strike option.” Thus, he not only favors nuclear weapons, but finds the security of these weapons to trump human security. Presumably he would have President Obama providing new and secure nuclear weapons to North Korea, Pakistan and any other nuclear weapons states that come along so that they will feel secure enough not to use their weapons in a first-strike attack. Do we really want to bet the human future that Kim Jong-Il and his successors are more rational than Mr. Tepperman?

### Warming

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise

**Prothero 12** [Donald R. Prothero, Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, "How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO]

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### Warming is real and causes extinction

**Morgan 9 –** Professor of Current Affairs @ Hankuk University of Foreign Studies, South Korea(Dennis Ray, “World on fire: two scenarios of the destruction of human civilization and possible extinction of the human race”, Futures, Volume 41, Issue 10, December 2009, Pages 683-693, ScienceDirect)

As horrifying as the scenario of human extinction by sudden, fast-burning nuclear fire may seem, the one consolation is that this future can be avoided within a relatively short period of time if responsible world leaders change Cold War thinking to move away from aggressive wars over natural resources and towards the eventual dismantlement of most if not all nuclear weapons. On the other hand, another scenario of human extinction by fire is one that may not so easily be reversed within a short period of time because it is not a fast-burning fire; rather, a slow burning fire is gradually heating up the planet as industrial civilization progresses and develops globally. This gradual process and course is long-lasting; thus it cannot easily be changed, even if responsible world leaders change their thinking about ‘‘progress’’ and industrial development based on the burning of fossil fuels. The way that global warming will impact humanity in the future has often been depicted through the analogy of the proverbial frog in a pot of water who does not realize that the temperature of the water is gradually rising. Instead of trying to escape, the frog tries to adjust to the gradual temperature change; finally, the heat of the water sneaks up on it until it is debilitated. Though it finally realizes its predicament and attempts to escape, it is too late; its feeble attempt is to no avail— and the frog dies. Whether this fable can actually be applied to frogs in heated water or not is irrelevant; it still serves as a comparable scenario of how the slow burning fire of global warming may eventually lead to a runaway condition and take humanity by surprise. Unfortunately, by the time the politicians finally all agree with the scientific consensus that global warming is indeed human caused, its development could be too advanced to arrest; the poor frog has become too weak and enfeebled to get himself out of hot water. The Intergovernmental Panel of Climate Change (IPCC) was established in 1988 by the WorldMeteorological Organization (WMO) and the United Nations Environmental Programme to ‘‘assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of humaninduced climate change, its potential impacts and options for adaptation and mitigation.’’[16]. Since then, it has given assessments and reports every six or seven years. Thus far, it has given four assessments.13 With all prior assessments came attacks fromsome parts of the scientific community, especially by industry scientists, to attempt to prove that the theory had no basis in planetary history and present-day reality; nevertheless, as more andmore research continually provided concrete and empirical evidence to confirm the global warming hypothesis, that it is indeed human-caused, mostly due to the burning of fossil fuels, the scientific consensus grew stronger that human induced global warming is verifiable. As a matter of fact, according to Bill McKibben [17], 12 years of ‘‘impressive scientific research’’ strongly confirms the 1995 report ‘‘that humans had grown so large in numbers and especially in appetite for energy that they were now damaging the most basic of the earth’s systems—the balance between incoming and outgoing solar energy’’; ‘‘. . . their findings have essentially been complementary to the 1995 report – a constant strengthening of the simple basic truth that humans were burning too much fossil fuel.’’ [17]. Indeed, 12 years later, the 2007 report not only confirms global warming, with a stronger scientific consensus that the slow burn is ‘‘very likely’’ human caused, but it also finds that the ‘‘amount of carbon in the atmosphere is now increasing at a faster rate even than before’’ and the temperature increases would be ‘‘considerably higher than they have been so far were it not for the blanket of soot and other pollution that is temporarily helping to cool the planet.’’ [17]. Furthermore, almost ‘‘everything frozen on earth is melting. Heavy rainfalls are becoming more common since the air is warmer and therefore holds more water than cold air, and ‘cold days, cold nights and frost have become less frequent, while hot days, hot nights, and heat waves have become more frequent.’’ [17]. Unless drastic action is taken soon, the average global temperature is predicted to rise about 5 degrees this century, but it could rise as much as 8 degrees. As has already been evidenced in recent years, the rise in global temperature is melting the Arctic sheets. This runaway polar melting will inflict great damage upon coastal areas, which could be much greater than what has been previously forecasted. However, what is missing in the IPCC report, as dire as it may seem, is sufficient emphasis on the less likely but still plausible worst case scenarios, which could prove to have the most devastating, catastrophic consequences for the long-term future of human civilization. In other words, the IPCC report places too much emphasis on a linear progression that does not take sufficient account of the dynamics of systems theory, which leads to a fundamentally different premise regarding the relationship between industrial civilization and nature. As a matter of fact, as early as the 1950s, Hannah Arendt [18] observed this radical shift of emphasis in the human-nature relationship, which starkly contrasts with previous times because the very distinction between nature and man as ‘‘Homo faber’’ has become blurred, as man no longer merely takes from nature what is needed for fabrication; instead, he now acts into nature to augment and transform natural processes, which are then directed into the evolution of human civilization itself such that we become a part of the very processes that we make. The more human civilization becomes an integral part of this dynamic system, the more difficult it becomes to extricate ourselves from it. As Arendt pointed out, this dynamism is dangerous because of its unpredictability. Acting into nature to transform natural processes brings about an . . . endless new change of happenings whose eventual outcome the actor is entirely incapable of knowing or controlling beforehand. The moment we started natural processes of our own - and the splitting of the atom is precisely such a man-made natural process -we not only increased our power over nature, or became more aggressive in our dealings with the given forces of the earth, but for the first time have taken nature into the human world as such and obliterated the defensive boundaries between natural elements and the human artifice by which all previous civilizations were hedged in’’ [18]. So, in as much as we act into nature, we carry our own unpredictability into our world; thus, Nature can no longer be thought of as having absolute or iron-clad laws. We no longer know what the laws of nature are because the unpredictability of Nature increases in proportion to the degree by which industrial civilization injects its own processes into it; through selfcreated, dynamic, transformative processes, we carry human unpredictability into the future with a precarious recklessness that may indeed end in human catastrophe or extinction, for elemental forces that we have yet to understand may be unleashed upon us by the very environment that we experiment with. Nature may yet have her revenge and the last word, as the Earth and its delicate ecosystems, environment, and atmosphere reach a tipping point, which could turn out to be a point of no return. This is exactly the conclusion reached by the scientist, inventor, and author, James Lovelock. The creator of the wellknown yet controversial Gaia Theory, Lovelock has recently written that it may be already too late for humanity to change course since climate centers around the world, . . . which are the equivalent of the pathology lab of a hospital, have reported the Earth’s physical condition, and the climate specialists see it as seriously ill, and soon to pass into a morbid fever that may last as long as 100,000 years. I have to tell you, as members of the Earth’s family and an intimate part of it, that you and especially civilisation are in grave danger. It was ill luck that we started polluting at a time when the sun is too hot for comfort. We have given Gaia a fever and soon her condition will worsen to a state like a coma. She has been there before and recovered, but it took more than 100,000 years. We are responsible and will suffer the consequences: as the century progresses, the temperature will rise 8 degrees centigrade in temperate regions and 5 degrees in the tropics. Much of the tropical land mass will become scrub and desert, and will no longer serve for regulation; this adds to the 40 per cent of the Earth’s surface we have depleted to feed ourselves. . . . Curiously, aerosol pollution of the northern hemisphere reduces global warming by reflecting sunlight back to space. This ‘global dimming’ is transient and could disappear in a few days like the smoke that it is, leaving us fully exposed to the heat of the global greenhouse. We are in a fool’s climate, accidentally kept cool by smoke, and before this century is over billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable. [19] Moreover, Lovelock states that the task of trying to correct our course is hopelessly impossible, for we are not in charge. It is foolish and arrogant to think that we can regulate the atmosphere, oceans and land surface in order to maintain the conditions right for life. It is as impossible as trying to regulate your own temperature and the composition of your blood, for those with ‘‘failing kidneys know the never-ending daily difficulty of adjusting water, salt and protein intake. The technological fix of dialysis helps, but is no replacement for living healthy kidneys’’ [19]. Lovelock concludes his analysis on the fate of human civilization and Gaia by saying that we will do ‘‘our best to survive, but sadly I cannot see the United States or the emerging economies of China and India cutting back in time, and they are the main source of emissions. The worst will happen and survivors will have to adapt to a hell of a climate’’ [19]. Lovelock’s forecast for climate change is based on a systems dynamics analysis of the interaction between humancreated processes and natural processes. It is a multidimensional model that appropriately reflects the dynamism of industrial civilization responsible for climate change. For one thing, it takes into account positive feedback loops that lead to ‘‘runaway’’ conditions. This mode of analysis is consistent  with recent research on how ecosystems suddenly disappear. A 2001 article in Nature, based on a scientific study by an international consortium, reported that changes in ecosystems are not just gradual but are often sudden and catastrophic [20]. Thus, a scientific consensus is emerging (after repeated studies of ecological change) that ‘‘stressed ecosystems, given the right nudge, are capable of slipping rapidly from a seemingly steady state to something entirely different,’’ according to Stephen Carpenter, a limnologist at the University of Wisconsin-Madison (who is also a co-author of the report). Carpenter continues, ‘‘We realize that there is a common pattern we’re seeing in ecosystems around the world, . . . Gradual changes in vulnerability accumulate and eventually you get a shock to the system - a flood or a drought - and, boom, you’re over into another regime. It becomes a self-sustaining collapse.’’ [20]. If ecosystems are in fact mini-models of the system of the Earth, as Lovelock maintains, then we can expect the same kind of behavior. As Jonathon Foley, a UW-Madison climatologist and another co-author of the Nature report, puts it, ‘‘Nature isn’t linear. Sometimes you can push on a system and push on a system and, finally, you have the straw that breaks the camel’s back.’’ Also, once the ‘‘flip’’ occurs, as Foley maintains, then the catastrophic change is ‘‘irreversible.’’ [20]. When we expand this analysis of ecosystems to the Earth itself, it’s frightening. What could be the final push on a stressed system that could ‘‘break the camel’s back?’’ Recently, another factor has been discovered in some areas of the arctic regions, which will surely compound the problem of global ‘‘heating’’ (as Lovelock calls it) in unpredictable and perhaps catastrophic ways. This disturbing development, also reported in Nature, concerns the permafrost that has locked up who knows how many tons of the greenhouse gasses, methane and carbon dioxide. Scientists are particularly worried about permafrost because, as it thaws, it releases these gases into the atmosphere, thus, contributing and accelerating global heating. It is a vicious positive feedback loop that compounds the prognosis of global warming in ways that could very well prove to be the tipping point of no return. Seth Borenstein of the Associated Press describes this disturbing positive feedback loop of permafrost greenhouse gasses, as when warming ‘‘. already under way thaws permafrost, soil that has been continuously frozen for thousands of years. Thawed permafrost releases methane and carbon dioxide. Those gases reach the atmosphere and help trap heat on Earth in the greenhouse effect. The trapped heat thaws more permafrost and so on.’’ [21]. The significance and severity of this problem cannot be understated since scientists have discovered that ‘‘the amount of carbon trapped in this type of permafrost called ‘‘yedoma’’ is much more prevalent than originally thought and may be 100 times [my emphasis] the amount of carbon released into the air each year by the burning of fossil fuels’’ [21]. Of course, it won’t come out all at once, at least by time as we commonly reckon it, but in terms of geological time, the ‘‘several decades’’ that scientists say it will probably take to come out can just as well be considered ‘‘all at once.’’ Surely, within the next 100 years, much of the world we live in will be quite hot and may be unlivable, as Lovelock has predicted. Professor Ted Schuur, a professor of ecosystem ecology at the University of Florida and co-author of the study that appeared in Science, describes it as a ‘‘slow motion time bomb.’’ [21]. Permafrost under lakes will be released as methane while that which is under dry ground will be released as carbon dioxide. Scientists aren’t sure which is worse. Whereas methane is a much more powerful agent to trap heat, it only lasts for about 10 years before it dissipates into carbon dioxide or other chemicals. The less powerful heat-trapping agent, carbon dioxide, lasts for 100 years [21]. Both of the greenhouse gasses present in permafrost represent a global dilemma and challenge that compounds the effects of global warming and runaway climate change. The scary thing about it, as one researcher put it, is that there are ‘‘lots of mechanisms that tend to be self-perpetuating and relatively few that tend to shut it off’’ [21].14 In an accompanying AP article, Katey Walters of the University of Alaska at Fairbanks describes the effects as ‘‘huge’’ and, unless we have a ‘‘major cooling,’’ - unstoppable [22]. Also, there’s so much more that has not even been discovered yet, she writes: ‘‘It’s coming out a lot and there’s a lot more to come out.’’ [22]. 4. Is it the end of human civilization and possible extinction of humankind? What Jonathon Schell wrote concerning death by the fire of nuclear holocaust also applies to the slow burning death of global warming: Once we learn that a holocaust might lead to extinction**, we have no right to gamble**, because if we lose, the game will be over, and neither we nor anyone else will ever get another chance. Therefore, although, scientifically speaking, there is all the difference in the world between the mere possibility that a holocaust will bring about extinction and the certainty of it, morally they are the same, and we have no choice but to address the issue of nuclear weapons as though we knew for a certainty that their use would put an end to our species [23].15 When we consider that beyond the horror of nuclear war, another horror is set into motion to interact with the subsequent nuclear winter to produce a poisonous and super heated planet, the chances of human survival seem even smaller. Who knows, even if some small remnant does manage to survive, what the poisonous environmental conditions would have on human evolution in the future. A remnant of mutated, sub-human creatures might survive such harsh conditions, but for all purposes, human civilization has been destroyed, and the question concerning human extinction becomes moot. Thus, **we have no other choice but to consider the finality of it all**, as Schell does: ‘‘Death lies at the core of each person’s private existence, but part of death’s meaning is to be found in the fact that it occurs in a biological and social world that survives.’’ [23].16 But what if the world itself were to perish, Schell asks. Would not it bring about a sort of ‘‘second death’’ – the death of the species – a possibility that the vast majority of the human race is in denial about? Talbot writes in the review of Schell’s book that it is not only the ‘‘death of the species, not just of the earth’s population on doomsday, but of countless unborn generations. They would be spared literal death but would nonetheless be victims . . .’’ [23]. That is the ‘‘second death’’ of humanity – the horrifying, unthinkable prospect that there are no prospects – that there will be no future. In the second chapter of Schell’s book, he writes that since we have not made a positive decision to exterminate ourselves but instead have ‘‘chosen to live on the edge of extinction, periodically lunging toward the abyss only to draw back at the last second, our situation is one of uncertainty and nervous insecurity rather than of absolute hopelessness.’’ [23].17 In other words, the fate of the Earth and its inhabitants has not yet been determined. Yet time is not on our side. Will we relinquish the fire and our use of it to dominate the Earth and each other, or will we continue to gamble with our future at this game of Russian roulette while **time** increasingly **stacks the cards against** our chances of **survival**?

#### The IFR is the only way to reduce coal emissions sufficiently to avert the worst climate disasters

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "Why We Should Build an Integral Fast Reactor Now," 11/25/9) http://skirsch.wordpress.com/2009/11/25/ifr/

To prevent a climate disaster, we must eliminate virtually all coal plant emissions worldwide in 25 years. The best way and, for all practical purposes, the only way to get all countries off of coal is not with coercion; it is to make them want to replace their coal burners by giving them a plug-compatible technology that is less expensive. The IFR can do this. It is plug-compatible with the burners in a coal plant (see Nuclear Power: Going Fast). No other technology can upgrade a coal plant so it is greenhouse gas free while reducing operating costs at the same time. In fact, no other technology can achieve either of these goals. The IFR can achieve both.¶ The bottom line is that without the IFR (or a yet-to-be-invented technology with similar ability to replace the coal burner with a cheaper alternative), it is unlikely that we’ll be able to keep CO2 under 450 ppm.¶ Today, the IFR is the only technology with the potential to displace the coal burner. That is why restarting the IFR is so critical and why Jim Hansen has listed it as one of the top five things we must do to avert a climate disaster.[4]¶ Without eliminating virtually all coal emissions by 2030, the sum total of all of our other climate mitigation efforts will be inconsequential. Hansen often refers to the near complete phase-out of carbon emissions from coal plants worldwide by 2030 as the sine qua non for climate stabilization (see for example, the top of page 6 in his August 4, 2008 trip report).¶ To stay under 450ppm, we would have to install about 13,000 GWe of new carbon-free power over the next 25 years. That number was calculated by Nathan Lewis of Caltech for the Atlantic, but others such as Saul Griffith have independently derived a very similar number and White House Science Advisor John Holdren used 5,600 GWe to 7,200 GWe in his presentation to the Energy Bar Association Annual Meeting on April 23, 2009. That means that if we want to save the planet, we must install more than 1 GWe per day of clean power every single day for the next 25 years. That is a very, very tough goal. It is equivalent to building one large nuclear reactor per day, or 1,500 huge wind turbines per day, or 80,000 37 foot diameter solar dishes covering 100 square miles every day, or some linear combination of these or other carbon free power generation technologies. Note that the required rate is actually higher than this because Hansen and Rajendra Pachauri, the chair of the IPCC, now both agree that 350ppm is a more realistic “not to exceed” number (and we’ve already exceeded it).¶ Today, we are nowhere close to that installation rate with renewables alone. For example, in 2008, the average power delivered by solar worldwide was only 2 GWe (which is to be distinguished from the peak solar capacity of 13.4GWe). That is why every renewable expert at the 2009 Aspen Institute Environment Forum agreed that nuclear must be part of the solution. Al Gore also acknowledges that nuclear must play an important role.¶ Nuclear has always been the world’s largest source of carbon free power. In the US, for example, even though we haven’t built a new nuclear plant in the US for 30 years, nuclear still supplies 70% of our clean power!¶ Nuclear can be installed very rapidly; much more rapidly than renewables. For example, about two thirds of the currently operating 440 reactors around the world came online during a 10 year period between 1980 and 1990. So our best chance of meeting the required installation of new power goal and saving the planet is with an aggressive nuclear program.¶ Unlike renewables, nuclear generates base load power, reliably, regardless of weather. Nuclear also uses very little land area. It does not require the installation of new power lines since it can be installed where the power is needed. However, even with a very aggressive plan involving nuclear, it will still be extremely difficult to install clean power fast enough.¶ Unfortunately, even in the US, we have no plan to install the clean power we need fast enough to save the planet. Even if every country were to agree tomorrow to completely eliminate their coal plant emissions by 2030, how do we think they are actually going to achieve that? There is no White House plan that explains this. There is no DOE plan. There is no plan or strategy. The deadlines will come and go and most countries will profusely apologize for not meeting their goals, just like we have with most of the signers of the Kyoto Protocol today. Apologies are nice, but they will not restore the environment.¶ We need a strategy that is believable, practical, and affordable for countries to adopt. The IFR offers our best hope of being a centerpiece in such a strategy because it the only technology we know of that can provide an economically compelling reason to change.¶ At a speech at MIT on October 23, 2009, President Obama said “And that’s why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. … The nation that wins this competition will be the nation that leads the global economy. I am convinced of that. And I want America to be that nation, it’s that simple.”¶ Nuclear is our best clean power technology and the IFR is our best nuclear technology. The Gen IV International Forum (GIF) did a study in 2001-2002 of 19 different reactor designs on 15 different criteria and 24 metrics. The IFR ranked #1 overall. Over 242 experts from around the world participated in the study. It was the most comprehensive evaluation of competitive nuclear designs ever done. Top DOE nuclear management ignored the study because it didn’t endorse the design the Bush administration wanted.¶ The IFR has been sitting on the shelf for 15 years and the DOE currently has no plans to change that.¶ How does the US expect to be a leader in clean energy by ignoring our best nuclear technology? Nobody I’ve talked to has been able to answer that question.¶ We have the technology (it was running for 30 years before we were ordered to tear it down). And we have the money: The Recovery Act has $80 billion dollars. Why aren’t we building a demo plant?¶ IFRs are better than conventional nuclear in every dimension. Here are a few:¶ Efficiency: IFRs are over 100 times more efficient than conventional nuclear. It extracts nearly 100% of the energy from nuclear material. Today’s nuclear reactors extract less than 1%. So you need only 1 ton of actinides each year to feed an IFR (we can use existing nuclear waste for this), whereas you need 100 tons of freshly mined uranium each year to extract enough material to feed a conventional nuclear plant.¶ Unlimited power forever: IFRs can use virtually any actinide for fuel. Fast reactors with reprocessing are so efficient that even if we restrict ourselves to just our existing uranium resources, we can power the entire planet forever (the Sun will consume the Earth before we run out of material to fuel fast reactors). If we limited ourselves to using just our DU “waste” currently in storage, then using the IFR we can power the US for over 1,500 years without doing any new mining of uranium.[5]¶ Exploits our largest energy resource: In the US, there is 10 times as much energy in the depleted uranium (DU) that is just sitting there as there is coal in the ground. This DU waste is our largest natural energy resource…but only if we have fast reactors. Otherwise, it is just waste. With fast reactors, virtually all our nuclear waste (from nuclear power plants, leftover from enrichment, and from decommissioned nuclear weapons)[6] becomes an energy asset worth about $30 trillion dollars…that’s not a typo…$30 trillion, not billion.[7] An 11 year old child was able to determine this from publicly available information in 2004.

#### Alternative methods can’t solve warming

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The ship is sinking slowly and we are quickly running out of time to develop and implement any such plan if we are to have any hope of saving the planet. What we need is a plan we can all believe in. A plan where our country's smartest people all nod their heads in agreement and say, "Yes, this is a solid, viable plan for keeping CO2 levels from touching 425ppm and averting a global climate catastrophe."¶ ¶ At his Senate testimony a few days ago, noted climate scientist James Hansen made it crystal clear once again that the only way to avert an irreversible climate meltdown and save the planet is to phase out virtually all coal plants worldwide over a 20 year period from 2010 to 2030. Indeed, if we don't virtually eliminate the use of coal worldwide, everything else we do will be as effective as re-arranging deck chairs on the Titanic.¶ ¶ Plans that won't work¶ ¶ Unfortunately, nobody has proposed a realistic and practical plan to eliminate coal use worldwide or anywhere close to that. There is no White House URL with such a plan. No environmental group has a workable plan either.¶ ¶ Hoping that everyone will abandon their coal plants and replace them with a renewable power mix isn't a viable strategy -- we've proven that in the U.S. Heck, even if the Waxman-Markey bill passes Congress (a big "if"), it is so weak that it won't do much at all to eliminate coal plants. So even though we have Democrats controlling all three branches of government, it is almost impossible to get even a weak climate bill passed.¶ ¶ If we can't pass strong climate legislation in the U.S. with all the stars aligned, how can we expect anyone else to do it? So expecting all countries to pass a 100% renewable portfolio standard (which is far far beyond that contemplated in the current energy bill) just isn't possible. Secondly, even if you could mandate it politically in every country, from a practical standpoint, you'd never be able to implement it in time. And there are lots of experts in this country, including Secretary Chu, who say it's impossible without nuclear (a point which I am strongly in agreement with).¶ ¶ Hoping that everyone will spontaneously adopt carbon capture and sequestration (CCS) is also a non-starter solution. First of all, CCS doesn't exist at commercial scale. Secondly, even if we could make it work at scale, and even it could be magically retrofitted on every coal plant (which we don't know how to do), it would require all countries to agree to add about 30% in extra cost for no perceivable benefit. At the recent G8 conference, India and China have made it clear yet again that they aren't going to agree to emission goals.¶ ¶ Saying that we'll invent some magical new technology that will rescue us at the last minute is a bad solution. That's at best a poor contingency plan.¶ ¶ The point is this: It should be apparent to us that we aren't going to be able to solve the climate crisis by either "force" (economic coercion or legislation) or by international agreement. And relying on technologies like CCS that may never work is a really bad idea.¶ ¶ The only remaining way to solve the crisis is to make it economically irresistible for countries to "do the right thing." The best way to do that is to give the world a way to generate electric power that is economically more attractive than coal with the same benefits as coal (compact power plants, 24x7 generation, can be sited almost anywhere, etc). Even better is if the new technology can simply replace the existing burner in a coal plant. That way, they'll want to switch. No coercion is required.

#### IFRs solve massive energy and overpopulation crunches that spark resource wars and water scarcity – no alternatives can solve

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

The global threat of anthropogenic climate change has become a political hot potato, especially in the USA. The vast majority of climate scientists, however, are in agreement that the potential consequences of inaction are dire indeed. Yet even those who dismiss concerns about climate change cannot discount an array of global challenges facing humanity that absolutely must be solved if wars, dislocations, and social chaos are to be avoided.¶ Human population growth exacerbates a wide range of problems, and with most demographic projections predicting an increase of about 50% to nine or ten billion by mid-century, we are confronted with a social and logistical dilemma of staggering proportions. The most basic human morality dictates that we attempt to solve these problems without resorting to forcible and draconian methods. At the same time, simple social justice demands that the developed world accept the premise that the billions who live today in poverty deserve a drastic improvement in their standard of living, an improvement that is being increasingly demanded and expected throughout the developing countries. To achieve environmental sustainability whilst supporting human well-being will require a global revolution in energy and materials technology and deployment fully as transformative as the Industrial Revolution, but unlike that gradual process we find ourselves under the gun, especially if one considers climate change, peak oil and other immediate sustainability problems to be bona fide threats.¶ It is beyond the purview of this paper to address the question of materials disposition and recycling [i], or the social transformations that will necessarily be involved in confronting the challenges of the next several decades. But the question of energy supply is inextricably bound up with the global solution to our coming crises. It may be argued that energy is the most crucial aspect of any proposed remedy. Our purpose here is to demonstrate that the provision of all the energy that humankind can possibly require to meet the challenges of the coming decades and centuries is a challenge that already has a realistic solution, using technology that is just waiting to be deployed.¶ Energy Realism¶ The purpose of this paper is not to exhaustively examine the many varieties of energy systems currently in use, in development, or in the dreams of their promoters. Nevertheless, because of the apparent passion of both the public and policymakers toward certain energy systems and the political influence of their advocates, a brief discussion of “renewable” energy systems is in order. Our pressing challenges make the prospect of heading down potential energy cul de sacs – especially to the explicit exclusion of nuclear fission alternatives – to be an unconscionable waste of our limited time and resources.¶ There is a vocal contingent of self-styled environmentalists who maintain that wind and solar power—along with other technologies such as wave and tidal power that have yet to be meaningfully developed—can (and should) provide all the energy that humanity demands. The more prominent names are well-known among those who deal with these issues: Amory Lovins, Lester Brown and Arjun Makhijani are three in particular whose organizations wield considerable clout with policymakers. The most recent egregious example to make a public splash, however, was a claim trumpeted with a cover story in Scientific American that all of our energy needs can be met by renewables (predominantly ‘technosolar’ – wind and solar thermal) by 2030. The authors of this piece—Mark Jacobson (Professor, Stanford) and Mark A. Delucchi (researcher, UC Davis)—were roundly critiqued [ii] online and in print.¶ An excellent treatment of the question of renewables’ alleged capacity to provide sufficient energy is a book by David MacKay [iii] called Sustainable Energy – Without the Hot Air. [iv] MacKay was a professor of physics at Cambridge before being appointed Chief Scientific Advisor to the Department of Energy and Climate Change in the UK. His book is a model of scientific and intellectual rigor.¶ Energy ideologies can be every bit as fervent as those of religion, so after suggesting Dr. MacKay’s book as an excellent starting point for a rational discussion of energy systems we’ll leave this necessary digression with a point to ponder. Whatever one believes about the causes of climate change, there is no denying that glaciers around the world are receding at an alarming rate. Billions of people depend on such glaciers for their water supplies. We have already seen cases of civil strife and even warfare caused or exacerbated by competition over water supplies. Yet these are trifling spats when one considers that the approaching demographic avalanche will require us to supply about three billion more people with all the water they need within just four decades.¶ There is no avoiding the fact that the water for all these people—and even more, if the glaciers continue to recede, as expected—will have to come from the ocean. That means a deployment of desalination facilities on an almost unimaginable scale. Not only will it take staggering amounts of energy just to desalinate such a quantity, but moving the water to where it is needed will be an additional energy burden of prodigious proportions. A graphic example can be seen in the case of California, its state water project being the largest single user of energy in California. It consumes an average of 5 billion kWh/yr, more than 25% of the total electricity consumption of the entire state of New Mexico [v].¶ Disposing of the salt derived from such gargantuan desalination enterprises will likewise take a vast amount of energy. Even the relatively modest desalination projects along the shores of the Persian Gulf have increased its salinity to the point of serious concern. Such circumscribed bodies of water simply won’t be available as dumping grounds for the mountains of salt that will be generated, and disposing of it elsewhere will require even more energy to move and disperse it. Given the formidable energy requirements for these water demands alone, any illusions about wind turbines and solar panels being able to supply all the energy humanity requires should be put to rest.¶ Energy Density and Reliability¶ Two of the most important qualities of fossil fuels that enabled their rise to prominence in an industrializing world is their energy density and ease of storage. High energy density and a stable and convenient long-term fuel store are qualities that makes it practical and economical to collect, distribute, and then use them on demand for the myriad of uses to which we put them. This energy density, and the dispatchability that comes from having a non-intermittent fuel source, are the very things lacking in wind and solar and other renewable energy systems, yet they are crucial factors in considering how we can provide reliable on-demand power for human society.¶ The supply of fossil fuels is limited, although the actual limits of each different type are a matter of debate and sometimes change substantially with new technological developments, as we’ve seen recently with the adoption of hydraulic fracturing (fracking) methods to extract natural gas from previously untapped subterranean reservoirs. The competition for fossil fuel resources, whatever their limitations, has been one of the primary causes of wars in the past few decades and can be expected to engender further conflicts and other symptoms of international competition as countries like India and China lead the developing nations in seeking a rising standard of living for their citizens. Even disregarding the climatological imperative to abandon fossil fuels, the economic, social, and geopolitical upheavals attendant upon a continuing reliance on such energy sources demands an objective look at the only other energy-dense and proven resource available to us: nuclear power.¶ We will refrain from discussing the much hoped-for chimera of nuclear fusion as the magic solution to all our energy needs, since it is but one of many technologies that have yet to be harnessed. Our concern here is with technologies that we know will work, so when it comes to harnessing the power of the atom we are confined to nuclear fission. The splitting of uranium and transuranic elements in fission-powered nuclear reactors is a potent example of energy density being tapped for human uses. Reactor-grade uranium (i.e. uranium enriched to about 3.5% U-235) is over 100,000 times more energy-dense than anthracite coal, the purest form of coal used in power generation, and nearly a quarter-million times as much as lignite, the dirty coal used in many power plants around the world. Ironically, one of the world’s largest producers and users of lignite is Germany, the same country whose anti-nuclear political pressure under the banner of environmentalism is globally infamous.¶ The vast majority of the world’s 440 commercial nuclear power plants are light-water reactors (LWRs) that use so-called enriched uranium (mentioned above). Natural uranium is comprised primarily of two isotopes: U-235 and U-238. The former comprises only 0.7% of natural uranium, with U-238 accounting for the remaining 99.3%. LWR technology requires a concentration of at least 3.5% U-235 in order to maintain the chain reaction used to extract energy, so a process called uranium enrichment extracts as much of the U-235 as possible from several kilos of natural uranium and adds it to a fuel kilo in order to reach a concentration high enough to enable the fission process. Because current enrichment technology is capable of harvesting only some of the U-235, this results in about 8-10 kilos of “depleted uranium” (DU) for every kilo of power plant fuel (some of which is enriched to 4% or more, depending on plant design). The USA currently has (largely unwanted) stockpiles of DU in excess of half a million tons, while other countries around the world that have been employing nuclear power over the last half-century have their own DU inventories.¶ Technological advances in LWR engineering have resulted in new power plants that are designated within the industry as Generation III or III+ designs, to differentiate them from currently-used LWRs normally referred to as Gen II plants. The European Pressurized Reactor (EPR), currently being built by AREVA in Finland, France and China, is an example of a Gen III design. It utilizes multiple-redundant engineered systems to assure safety and dependability. Two examples of Gen III+ designs are the Westinghouse/Toshiba AP-1000, now being built in China, and GE/Hitachi’s Economic Simplified Boiling Water Reactor (ESBWR), expected to be certified for commercial use by the U.S. Nuclear Regulatory Commission by the end of 2011. The distinguishing feature of Gen III+ designs is their reliance on the principle of passive safety, which would allow the reactor to automatically shut down in the event of an emergency without operator action or electronic feedback, due to inherent design properties. Relying as they do on the laws of physics rather than active intervention to intercede, they consequently can avoid the necessity for several layers of redundant systems while still maintaining ‘defense in depth’, making it possible to build them both faster and cheaper than Gen III designs—at least in theory. As of this writing we are seeing this playing out in Finland and China. While it is expected that first-of-a-kind difficulties (and their attendant costs) will be worked out so that future plants will be cheaper and faster to build, the experience to date seems to validate the Gen III+ concept. Within a few years both the EPR and the first AP-1000s should be coming online, as well as Korean, Russian and Indian designs, at which point actual experience will begin to tell the tale as subsequent plants are built.¶ The safety and economics of Gen III+ plants seem to be attractive enough to consider this generation of nuclear power to provide reasons for optimism that humanity can manage to provide the energy needed for the future. But naysayers are warning (with highly questionable veracity) about uranium shortages if too many such plants are built. Even if they’re right, the issue can be considered moot, for there is another player waiting in the wings that is so superior to even Gen III+ technology as to render all concerns about nuclear fuel shortages baseless.¶ The Silver Bullet¶ In the endless debate on energy policy and technology that seems to increase by the day, the phrase heard repeatedly is “There is no silver bullet.” (This is sometimes rendered “There is no magic bullet”, presumably by those too young to remember the Lone Ranger TV series.) Yet a fission technology known as the integral fast reactor (IFR), developed at Argonne National Laboratory in the 80s and 90s, gives the lie to that claim.¶ Below is a graph [vi] representing the number of years that each of several power sources would be able to supply all the world’s expected needs if they were to be relied upon as the sole source of humanity’s energy supply. The categories are described thusly:¶ Conventional oil: ordinary oil drilling and extraction as practiced today¶ Conventional gas: likewise¶ Unconventional oil (excluding low-grade oil shale). More expensive methods of recovering oil from more problematic types of deposits¶ Unconventional gas (excluding clathrates and geopressured gas): As with unconventional oil, this encompasses more costly extraction techniques¶ Coal: extracted with techniques in use today. The worldwide coal estimates, however, are open to question and may, in fact, be considerably less than they are ordinarily presented to be, unless unconventional methods like underground in situ gasification are deployed. [vii]¶ Methane Clathrates & Geopressured Gas: These are methane resources that are both problematic and expensive to recover, with the extraction technology for clathrates only in the experimental stage.¶ Low-grade oil shale and sands: Very expensive to extract and horrendously destructive of the environment. So energy-intensive that there have been proposals to site nuclear power plants in the oil shale and tar sands areas to provide the energy for extraction!¶ Uranium in fast breeder reactors (IFRs being the type under discussion here) Integral fast reactors can clearly be seen as the silver bullet that supposedly doesn’t exist. The fact is that IFRs can provide all the energy that humanity requires, and can deliver it cleanly, safely, and economically. This technology is a true game changer.

#### Resource scarcity causes global wars – highly probable

**Klare 2006** – professor of peace and world security studies at Hampshire College

(Michael, Mar 6 2006, “The coming resource wars” http://www.energybulletin.net/node/13605)

It's official: the era of resource wars is upon us. In a major London address, British Defense Secretary John Reid warned that global climate change and **dwindling natural resources are combining to increase the likelihood of violent conflict** over land, water and energy. Climate change, he indicated, “will make scarce resources, clean water, viable agricultural land even scarcer”—and this will “make the emergence of violent conflict more rather than less likely.” Although not unprecedented, Reid’s prediction of an upsurge in resource conflict is significant both because of his senior rank and the vehemence of his remarks. “The blunt truth is that the lack of water and agricultural land is a significant contributory factor to the tragic conflict we see unfolding in Darfur,” he declared. “We should see this as a warning sign.” Resource conflicts of this type are most likely to arise in the developing world, Reid indicated, but the more advanced and affluent countries are not likely to be spared the damaging and destabilizing effects of global climate change. With sea levels rising, water and energy becoming increasingly scarce and prime agricultural lands turning into deserts, internecine warfare over access to vital resources will become a global phenomenon. Reid’s speech, delivered at the prestigious Chatham House in London (Britain’s equivalent of the Council on Foreign Relations), is but the most recent expression of a growing trend in strategic circles to view environmental and resource effects—rather than political orientation and ideology—as the most potent source of armed conflict in the decades to come. With the world population rising, global consumption rates soaring, energy supplies rapidly disappearing and climate change eradicating valuable farmland, the stage is being set for persistent and worldwide struggles over vital resources. Religious and political strife will not disappear in this scenario, but rather will be channeled into contests over valuable sources of water, food and energy.

#### Water scarcity causes extinction

**Coddrington 10** (7/1, http://www.tomorrowtoday.co.za/2010/07/01/a-looming-crisis-world-water-wars/

PhD-Business Adminstration & Guest lecturer at top business schools, including the London Business School, Duke Corporate Education and the Gordon Institute of Business Science.)

People go to war when their way of life is threatened. I have written before about the many issues we face in the coming years that threaten our way of life. These include global warming/climate change, pollution, pandemics, nuclear bombs, intelligent machines, genetics, and more. More and more I am becoming convinced that the next major regional/global conflict will be over water. We are much more likely to have water wars in the next decade than nuclear ones. And I were to guess, I’d say that it is most likely to happen in around North East Africa. This is a region with its own internal issues. But it also has the foreign involvement of America, China, the Middle Eastern Arab nations, and (increasingly) Israel. Quite a potent mix… Last week, Addis Ababa, Ethiopia hosted the 18th regular meeting of the Council of Ministers of Water Affairs of the Nile Basin countries. In the lead up to the conference, Ethiopia, Rwanda, Uganda, Tanzania and Kenya, the five countries that are all upstream of Egypt and Sudan concluded a water-sharing treaty – to the exclusion of Egypt and Sudan. This has obviously reignited the longstanding dispute over water distribution of the world’s longest river in the world’s driest continent. Egypt is currently the largest consumer of Nile water and is the main beneficiary of a 1929 treaty which allows it to take 55.5 billion cubic metres of water each year, or 87% of the White and Blue Nile’s flow. By contrast, Sudan is only allowed to draw 18.5 billion cubic metres. On attaining independence Sudan refused to acknowledge the validity of the Nile water treaty and negotiated a new bilateral treaty with Egypt in 1959. Kenya, Tanzania and Uganda also expressly refused to be bound by the treaty when they attained independence, but have not negotiated a new treaty since then. Under the 1929 treaty, Egypt has powers over upstream projects: The Nile Waters Agreement of 1929 states that no country in the Nile basin should undertake any works on the Nile, or its tributaries, without Egypt’s express permission. This gives Egypt a veto over anything, including the building of dams on numerous rivers in Kenya, Burundi, Rwanda, Tanzania, Ethiopia, and by implication Egypt has control over agriculture, industry and infrastructure and basic services such as drinking water and electricity in these countries. This is surely untenable. But if the other countries broke the treaty, would Egypt respond with force? Since the late 1990s, Nile Basin states have been trying unsuccessfully to develop a revised framework agreement for water sharing, dubbed the Nile Basin Initiative (NBI). In May 2009, talks held in Kinshasa broke down because Egypt and Sudan’s historical water quotas were not mentioned in the text of the proposed agreement. Water ministers met again in July 2009 in Alexandria, where Egypt and Sudan reiterated their rejection of any agreement that did not clearly establish their historical share of water. This is an untenable position. Upstream states accuse Egypt and Sudan of attempting to maintain an unfair, colonial-era monopoly on the river. Egyptian officials and analysts, however, defend their position, pointing out that Egypt is much more dependent on the river for its water needs than its upstream neighbours. Egypt claims that Nile water accounts for more than 95% of Egypt’s total water consumption, although they appear to be working hard to reduce both their water usage (they’re stopping growing rice, for example) and their dependence on the Nile.

### Solvency

#### Contention 4: Solvency

#### Current loan guarantees aren’t enough – more on new reactor types are key to catalyze nuclear construction and solve nuclear leadership

**Belogolova 12** [National Journal Daily, July 19, 2012, “U.S. Nuclear Industry Seen Needing a Boost”, Olga Belogolova, lexis, khirn]

A robust nuclear-energy industry should be a high priority for the country's energy and national-security policy given the importance of the sector to global nonproliferation, according to a new report released on Thursday by the Bipartisan Policy Center's Nuclear Initiative . Specifically, the United States needs to lead in the licensing and development **of new reactors** and on safety reforms, management of spent nuclear fuel, the nuclear-export market, and research and development in the nuclear sector, according to the report led by former Sen. Pete Domenici, R-N.M., and former Energy Department Assistant Secretary for Nuclear Energy Warren (Pete) Miller. But leadership on nuclear issues could prove to be a challenge for the United States. Although the country has long led the charge on civilian nuclear power, the combination of a slowed electricity market, the lack of sweeping climate legislation, a natural-gas boom, and last year's Fukushima Daiichi nuclear accident in Japan have created obstacles for the development of new nuclear power in the United States in recent years. While the Nuclear Regulatory Commission this year has approved four new reactors for the Vogtle and Summer nuclear plants in Georgia and South Carolina, respectively, there are likely to only be a few more plants licensed in the United States in the near future. The story is very different on the international level. After Fukushima, countries such as Germany, Italy, Switzerland, and of course Japan have paused or slowed down their nuclear-energy development, but that hasn't stopped the rest of the world. Many other nations such as China, India, South Korea, and Russia have reaffirmed plans to expand their fleets of nuclear reactors, while some countries in the Middle East have even announced plans to develop nuclear energy for the first time. China alone, which has 26 new reactors under development, is expected to account for 40 percent of planned nuclear construction globally. The United States might be a leader now, accounting for nearly one-third of global nuclear generation, but it won't be long before others come out ahead of us, especially given how long it takes to construct new reactors, Domenici and Miller explained. "It will be increasingly difficult for the United States to maintain its technological leadership without some near-term domestic demand for new construction," they write in the report. In order to control the proliferation of nuclear weapons, the United States **needs to remain involved in everything** that happens to nuclear materials, from the export of nuclear fuel for energy use to the disposal of spent fuel. Given the global picture, Domenici and Miller suggest a shift in U.S. policies in order to ensure that the U.S. nuclear energy program is not stuck at a near-standstill. "Market signals alone are unlikely to result in a diverse fuel mix, so helping to maintain and improve a range of electricity supply options remains a role for federal policy," the two write in the report. "In particular, U.S. policy should be aimed at helping to preserve nuclear energy as an important technology option for near- or longer-term deployment." The vast shale-gas reserves in the United States and new technology to tap them will probably keep natural-gas prices low for the foreseeable future, making financing of more expensive nuclear power more difficult. **Federal loan guarantees have long been viewed as crucial to growing the nuclear industry**, but the Energy Department has dragged its feet on these conditional loans, especially after the bankruptcy of the federally funded solar firm Solyndra so much so that some companies have decided not to wait around and see what happens. Southern Company, which is building the first two new reactors to be approved in decades at its Vogtle nuclear plant in Georgia, on Thursday said that it is now considering doing so without federal support. The company had been waiting for an $8.33 billion loan guarantee to build the two new reactors, but Southern CEO Tom Fanning told Reuters on Thursday that talks with DOE were going slowly and they might not be willing to wait any longer.

#### Loan guarantees attract private capital – increases are key

**Peskoe 12** [Ari Peskoe, associate in the law firm of McDermott Will and Emery LLP and focuses his practice on regulatory, legislative, compliance, and transactional issues related to energy markets, 4-20-2012, "A Solution Looking For a Problem: Building More Nuclear Reactors after Vogtle," The Electricty Journal, vol 25 issue 3, Science Direct]

Given the checkered history of reactor construction projects,56 private lenders are understandably skittish about lending billions of dollars to develop a new reactor. Construction of the Vogtle and SCANA reactors will be a critical test, and significant cost overruns on these two projects could doom the prospects for construction of additional reactors. Even if the construction of Vogtle and SCANA are on budget, it will likely still be difficult for future project developers to raise enough debt financing without government support.57 Federal loan guarantees shift “a large part of the learning costs and construction risks” from private lenders to the federal government by ensuring that lenders receive payment in the event that the developer defaults on repayments.58 Appropriations for the guarantees authorized by the Energy Policy Act of 2005 will soon run out, so future guarantees will require congressional action.59¶ Loan guarantees cost the federal government little or nothing unless there is an event of default.60 Creating a long-term guarantee program would be entirely consistent with the government's historic role in accepting risks and liabilities of nuclear power. Although it has not been implemented effectively, the Nuclear Waste Policy Act (NWPA) of 1982 requires the DOE to transport nuclear waste from privately owned reactors to permanent government storage facilities.61 Concerned about a “cloud of bankruptcy” hanging over its operations,62 the nascent nuclear industry pushed Congress to pass the Price-Anderson Act in 1957, which indemnifies the industry against claims arising from a nuclear incident. Both the NWPA and the Price-Anderson Act socialize costs of nuclear energy. In the case of the NWPA, the industry pays the DOE a tenth of a penny for each kilowatt-hour of nuclear energy sold to fund waste disposal activities.63 The Price-Anderson Act also requires generators to contribute to a fund, but the federal treasury would likely cover much of the liabilities associate with a nuclear disaster.64

#### And, loan guarantees reduce financial uncertainty and boost investment

Adams 10—Publisher of Atomic insights Was in the Navy for 33 years Spent time at the Naval Academy Has experience designing and running small nuclear plants (Rod, Concrete Action to Follow Strongly Supportive Words On Building New Nuclear Power Plants, atomicinsights.com/2010/01/concrete-action-to-follow-strongly-supportive-words-on-building-new-nuclear-power-plants.html)

Loan guarantees are important to the nuclear industry because the currently available models are large, capital intensive projects that need a stable regulatory and financial environment. The projects can be financed because they will produce a regular stream of income that can service the debt and still provide a profit, but that is only true if the banks are assured that the government will not step in at an inopportune time to halt progress and slow down the revenue generation part of the project. Bankers do not forget history or losses very easily; they want to make sure that government decisions like those that halted Shoreham, Barnwell’s recycling facility or the Clinch River Breeder Reactor program are not going to be repeated this time around. For the multi-billion dollar projects being proposed, bankers demand the reassurance that comes when the government is officially supportive and has some “skin in the game” that makes frivolous bureaucratic decisions to erect barriers very expensive for the agency that makes that decision. I have reviewed the conditions established for the guarantee programs pretty carefully – at one time, my company ([Adams Atomic Engines, Inc.](http://www.atomicengines.com)) was considering filing an application. The loan conditions are strict and do a good job of protecting government interests. They were not appropriate for a tiny company, but I can see where a large company would have less trouble complying with the rules and conditions. The conditions do allow low or no cost intervention in the case of negligence or safety issues, but they put the government on the hook for delays that come from bad bureaucratic decision making.

#### Manhattan Project approach key to catalyze quick investment in IFRs – perception is non-unique, there is government investment now

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Q. If this is really so good, how come GE isn't building S-PRISM on their own nickel?¶ Nobody wants to risk it since it isn't a slam dunk. You don't get a reward if you solve global warming. And government funding doesn't seem to be so easy. DOE tried to get funding for GNEP (which included IFR technology) and got shot down (so far).¶ GE is a large conservative corporation. They already service a fleet of lightwater reactors, are building more of them around the world, and have the promise of yet more. It's hard enough in this country to move into new levels of reactor technology without trying to leapfrog straight into the 4th generation. Their 3rd generation ESBWR is in the 5th round of NRC certification, whereas the S-PRISM (a souped up and more developed version of the PRISM) isn't at the starting gate. These things take years at the glacial pace of the NRC, though of course if President Obama decided to go all Manhattan project on it we could most definitely get there quickly enough. If GE started pushing 4th generation breeder reactors, can you imagine the hue and cry from the antie groups? What's their incentive to do that? If they're convinced that ultimately we'll end up at 4th generation reactors anyway and they can make plenty of dough and keep a low profile just taking the go slow approach, don't you imagine that's exactly what they'll do? Besides, conceivably another country with whom we have nuclear technology sharing agreements might very well certify and build it before the NRC ever gets out of the starting gate, which would make it much easier for the eventual NRC certification. Q. If this is really so good, how come someone in government isn't trying to get it restarted?¶ The DOE is attempting to resuscitate fast-reactor technology, as part of the GNEP (Global Nuclear Energy Partnership) initiative. See¶ http://www.gnep.energy.gov/gnepPRs/gnepPR011007.html, and http://www.gnep.energy.gov/.¶ The IFR is one form of fast-reactor technology (metallic fuel with pyroprocessing), but there are others -- inferior, according to the IFR scientists. The important thing these days is to get the U.S. back into a leadership role in the development and management of nuclear power, recognizing that recycling in fast reactors is necessary if the long-lived waste is to be consumed, and if the full energy potential of the uranium is to be exploited. The GNEP would resuscitate fast-reactor technology in this country.

#### Plan is modeled internationally

**Blees et al** 11 (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) <http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/>

There are many compelling reasons to pursue the rapid demonstration of a full-scale IFR, as a lead-in to a subsequent global deployment of this technology within a relatively short time frame. Certainly the urgency of climate change can be a potent tool in winning over environmentalists to this idea. Yet political expediency—due to widespread skepticism of anthropogenic causes for climate change—suggests that the arguments for rolling out IFRs can be effectively tailored to their audience. Energy security—especially with favorable economics—is a primary interest of every nation.¶ The impressive safety features of new nuclear power plant designs should encourage a rapid uptick in construction without concern for the spent fuel they will produce, for all of it will quickly be used up once IFRs begin to be deployed. It is certainly manageable until that time. Burying spent fuel in non-retrievable geologic depositories should be avoided, since it represents a valuable clean energy resource that can last for centuries even if used on a grand scale.¶ Many countries are now beginning to pursue fast reactor technology without the cooperation of the United States, laboriously (and expensively) re-learning the lessons of what does and doesn’t work. If this continues, we will see a variety of different fast reactor designs, some of which will be less safe than others. Why are we forcing other nations to reinvent the wheel? Since the USA invested years of effort and billions of dollars to develop what is arguably the world’s safest and most efficient fast reactor system in the IFR, and since several nations have asked us to share this technology with them (Russia, China, South Korea, Japan, India), there is a golden opportunity here to develop a common goal—a standardized design, and a framework for international control of fast reactor technology and the fissile material that fuels them. This opportunity should be a top priority in the coming decade, if we are serious about replacing fossil fuels worldwide with sufficient pace to effectively mitigate climate change and other environmental and geopolitical crises of the 21st century.

#### IFR’s S-PRISM design is super safe

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

Metal Fuel: The Ultimate Safety Valve¶ One of the most important of the many superlatives of the IFR is its use of a metal fuel comprised of uranium, plutonium and zirconium, and the ingenious manner in which the Argonne team solved the problems of fuel expansion and fuel fabrication, as well as the potentially dangerous overheating scenario. Unlike the fuel fabrication of oxide-fueled reactors that requires the dimensions of the fuel pellets to be uniform to very exacting tolerances, the metal fuel for the IFR can be simply injected into molds and then cooled and inserted into metal tubes (cladding) with a great deal of dimensional tolerance, with a sodium bond filling any voids. If an accident situation occurs that would cause the core to overheat, such as a loss of coolant flow accident, the metal fuel itself will expand, causing neutron leakage to terminate the chain reaction, relying on nothing but the laws of physics.¶ The passive safety characteristics of the IFR were tested in EBR-II on April 3, 1986, against two of the most severe accident events postulated for nuclear power plants. The first test (the Loss of Flow Test) simulated a complete station blackout, so that power was lost to all cooling systems. The second test (the Loss of Heat Sink Test) simulated the loss of ability to remove heat from the plant by shutting off power to the secondary cooling system. In both of these tests, the normal safety systems were not allowed to function and the operators did not interfere. The tests were run with the reactor initially at full power.¶ In both tests, the passive safety features simply shut down the reactor with no damage. The fuel and coolant remained within safe temperature limits as the reactor quickly shut itself down in both cases. Relying only on passive characteristics, EBR-II smoothly returned to a safe condition without activation of any control rods and without action by the reactor operators. The same features responsible for this remarkable performance in EBR-II will be incorporated into the design of future IFR plants, regardless of how large they may be [xi].¶ While the IFR was under development, a consortium of prominent American companies led by General Electric collaborated with the IFR team to design a commercial-scale reactor based upon the EBR-II research. This design, currently in the hands of GE, is called the PRISM (Power Reactor Innovative Small Module). A somewhat larger version (with a power rating of 380 MWe) is called the S-PRISM. As with all new nuclear reactor designs (and many other potentially hazardous industrial projects), probabilistic risk assessment studies were conducted for the S-PRISM. Among other parameters, the PRA study estimated the frequency with which one could expect a core meltdown. This occurrence was so statistically improbable as to defy imagination. Of course such a number must be divided by the number of reactors in service in order to convey the actual frequency of a hypothetical meltdown. Even so, if one posits that all the energy humanity requires were to be supplies solely by IFRs (an unlikely scenario but one that is entirely possible), the world could expect a core meltdown about once every 435,000 years [xii]. Even if the risk assessment understated the odds by a factor of a thousand, this would still be a reactor design that even the most paranoid could feel good about.

#### IFR fuel can be obtained from seawater – makes energy infinite

Archambeauet all 11 [The Integral Fast Reactor (IFR): An Optimized Source for Global Energy Needs, Charles Archambeau, Science Council for Global Initiatives, Randolph Ware, Cooperative Institute for Research in Environmental Sciences, Tom Blees, National Center for Atmospheric Research, Barry Brook, University of Adelaide, Jerry Peterson, Argonne National Laboratory,¶ Yoon Chang, University of Colorado, February 2011]

The pyroprocessor unit can be used as a stand-alone system to process LWR waste from¶ any open cycle reactor into fuel for IFR closed cycle reactors. The depleted Uranium¶ produced by the enrichment of Uranium ore can also be processed to generate additional¶ IFR fuel. The current amount of LWR waste, plus the amount of depleted Uranium in¶ stock piles world-wide, is sufficient to supply fuel to all the IFR plants needed and in fact¶ to supply the world's required energy for about 1000 years.3 The problem of storage of¶ current LWR waste and depleted Uranium waste from refining of mined Uranium is¶ therefore solved by pyroprocessor generation of IFR fuel, along with a relatively small¶ mass of short-lived fission products which can be easily and safely stored. Uranium can¶ also be extracted from sea water using IFR power sources (see, for example, Cohen, 1983).¶ Because Uranium is constantly added to seawater by erosion processes, then the IFR fuel¶ source is effectively unlimited. Therefore, IFR power plants do not require fuel from¶ regular mining operations, as does a LWR powered plant, but can use pyroprocessor¶ generated fuel essentially indefinitely. In this sense the IFR is a "renewable" energy source¶ which can be expanded, essentially indefinitely, to meet demand.

#### Government support is vital-~--it overcomes financial barriers to nuclear that the market cannot

Yanosek 12 Kassia, entrepreneur-in-residence at Stanford University’s Steyer-Taylor Center for Energy Policy and Finance and a private equity investor in the energy sector as a principal at Quadrant Management and Founder of Tana Energy Capital LLC, " Financing Nuclear Power in the US", Spring, energyclub.stanford.edu/index.php/Journal/Financing\_Nuclear\_Power\_by\_Kassia\_Yanosek

Over the course of the last decade, it appeared that concerns about carbon emissions, aging coal fleets, and a desire for a diversified generation base were reviving the U.S. utility sector interest in building new nuclear plants. Government and companies worked closely on design certification for Generation III reactors, helping to streamline the licensing process. New loan guarantees from the federal government targeted for nuclear projects were created as part of the 2005 Energy Policy Act. Consequently, dozens of projects entered the planning stages. Following more than 30 years in which no new units were built, it looked as if the U.S. nuclear industry was making significant headway. However, it is yet to be seen how many new nuclear projects will actually make it beyond blueprints due to one of the largest barriers to new nuclear construction: financing risk. Large upfront capital costs, a complex regulatory process, uncertain construction timelines, and technology challenges result in a risk/return profile for nuclear projects that is unattractive for the capital markets without supplementary government or ratepayer support. To many investors, nuclear seems too capital-intensive. Nuclear energy has attractive qualities in comparison to other sources of electricity. A primary motivation to pursue the development of nuclear energy in the U.S. has been its low operating fuel costs compared with coal, oil, and gas-fired plants. Over the lifetime of a generating station, fuel makes up 78% of the total costs of a coal-fired plant. For a combined cycle gas-fired plant, the figure is 89%. According to the Nuclear Energy Institute, the costs for nuclear are approximately 14%, and include processing, enrichment, and fuel management/disposal costs. Today’s low natural gas prices have enhanced the prospects of gas-fired power, but utilities still remain cautious about over-investing in new natural gas generation given the historical volatility of prices. Furthermore, nuclear reactors provide baseload power at scale, which means that these plants produce continuous, reliable power to consistently meet demand. In contrast, renewable energies such as wind or solar are only available when the wind blows or the sun shines, and without storage, these are not suitable for large-scale use. Finally, nuclear energy produces no carbon emissions, which is an attractive attribute for utilities that foresee a carbon tax being imposed in the near future. Given nuclear’s benefits, one may wonder why no new nuclear units have been ordered since the 1970s. This hiatus is in great part due to nuclear’s high cost comparative to other alternatives, and its unique set of risks. As a result, financing nuclear has necessitated government involvement, as the cost of nuclear typically exceeds that of the cost of conventional generation technologies such as coal and natural gas fired generation on a levelized cost of energy (LCOE) basis. LCOE represents the present value of the total cost of building and operating a generating plant over its financial life, converted to equal annual payments and amortized over expected annual generation, and is used to compare across different power generation technologies. For both regulated utilities and independent power producers, nuclear is unattractive if the levelized cost exceeds that of other technologies, since state utility commissions direct regulated utilities to build new capacity using the technology with the lowest LCOE. Furthermore, capital costs are inherently high, ranging in the billions or tens of billions of dollars, and are compounded by financing charges during long construction times. Without government support, financing nuclear is currently notpossible in the capital markets. Recently, Constellation Energy and NRG separately pulled the plug on new multi-billion dollar plants, citing financing problems. Projects, however, will get done on a one-off basis. Southern Company’s Vogtle Plant in Eastern Georgia is likely to be the sponsor of the first new generation to be constructed, taking advantage of local regulatory and federal support. Two new reactors of next-generation technology are in the permitting stage, which will bring online 2,200 megawatts (MW) of new capacity, and will cost $14 billion. The project will take advantage of tax credits and loan guarantees provided in the 2005 Energy Policy Act.

#### IFR’s are really cheap – existing coal plants can be retrofitted – solves warming

Archambeauet all 11 [The Integral Fast Reactor (IFR): An Optimized Source for Global Energy Needs, Charles Archambeau, Science Council for Global Initiatives, Randolph Ware, Cooperative Institute for Research in Environmental Sciences, Tom Blees, National Center for Atmospheric Research, Barry Brook, University of Adelaide, Jerry Peterson, Argonne National Laboratory,¶ Yoon Chang, University of Colorado, February 2011]

The new features of the IFR systems with pyroprocessing are such that the cost of¶ electrical energy production is estimated to be quite low, in the range below $.01 per¶ kilowatt-hour for an IFR. (For comparison, natural gas fuel cost was at $.05 per kilowatthour,¶ and coal was at about $.03 per kilowatt-hour, while LWR nuclear power was at $.02¶ per kilowatt-hour.) The G.E. estimated building cost of the S-Prism reactor (Fletcher,¶ 2006) is $1300/kw, where this cost assumes some cost savings due to mass production and¶ modular construction. For a commercial level gigawatt reactor (using 3 modular S-Prism¶ reactors with 380 MW of power from each) the cost would total $1.3 billion dollars per¶ one gigawatt plant. These nuclear plants are essentially carbon dioxide emissions free, and¶ in general produce no atmospheric pollution. Further, all the Uranium fuel can be provided¶ from processing the stock piles of spent and depleted Uranium fuel. Therefore, no Uranium¶ mining and associated pollution will occur. Likewise, IFR waste material is minimal and¶ short-lived so that no pollution will occur from this source. Consequently, significant¶ reduction in greenhouse gases, and a variety of other dangerous pollutants, can be¶ immediately achieved if these IFR plants are used to replace the furnaces in coal burning¶ power plants which exist in profusion world-wide. Here the infrastructure at existing coal fueled plants, such as electric power lines, water sources and conduits, steam turbines, etc.,¶ can all be simply converted and used in the nuclear powered plant. Hence, costs of¶ building complete power plants and their electrical connections to the grid can be¶ minimized while the impact on global warming and pollution related diseases can be¶ maximized by replacing the worst of the polluters. Further, it is urgent that we move¶ quickly to strongly and immediately control CO2 gas emissions to drastically slow global¶ warming. Clearly, the costs are not prohibitive since construction of one large stand-alone¶ pyroprocessing plant, at about 6 billion dollars, and only about 10 of the large IFR¶ powered plants, costing under 20 billion dollars, will go a long way toward strongly¶ dampening the massive production of CO2 emissions from existing electricity power plants¶ in the U.S.

## 2ac

### Solvency

#### We can build them really quickly

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

How Fast Can We Build Them?¶ During France’s nuclear building boom they built an average of six nuclear power plants per year, culminating in a situation that provides them with about 80% of their electrical needs while making electricity their fourth-largest export earner. Gross Domestic Product (GDP) can be used as a rough guide to what a given country can financially bear for such a project, keeping in mind that France proceeded without the sense of urgency that the world today should certainly be ready to muster. There are six countries with higher GDPs than France, all of whom already possess the technology to build fast reactors: USA, China, Japan, India (they’re building one now), Germany, and the United Kingdom. Add Canada and Russia (which already has a commercial fast reactor running and is planning more), then tally up the GDP of these eight countries. At the rate of 6 plants per year (~ 1GW each) at the equivalent of France’s GDP, these countries alone could afford to build about 117 power plants per year, even without any greater urgency than the French brought to bear on their road to energy independence.¶ Consider that there are about 400 nuclear power plants in the world today. At this entirely feasible rate of construction we could more than double the planet’s nuclear capacity in just four years. Remember, the French accomplished their transformation with non-modular, albeit standardized, Gen II designs. Modular construction, passive safety systems, and factory fabrication, divided among companies all over the planet, could realistically convert the planet’s electricity production to virtually all nuclear in a couple decades, with abundant surplus electricity for ancillary uses such as desalination and the production of liquid fuels such as ammonia.

### Enviro Management 2AC

#### Managing nature does not devalue anyone—we should respond because nature will kill us off otherwise

DE MAGALHÃES 2008(João Pedro, Lecturer in the School of Biological Sciences at the University of Liverpool in England [equivalent to an assistant professor in the US system], “>H: The Sky Is the Limit,” http://jp.senescence.info/thoughts/transhumanism.html)

**Humans are not a finished product**; we are evolving organisms, waiting for the right conditions to blossom. **We can and we must evolve beyond natural and biological limits**. It is our destiny. Contra naturam, **the defiance of Nature, has lead us to increase our quality of life and longevity.** In fact, **Nature has committed countless crimes against humanity: plagues and diseases, earthquakes and floods, pests, poisonous plants, and aging; Nature created us to suffer and die**. In fact, if it wasn't for Dr. Fleming's penicillin, I would be naturally dead because I had pneumonia when I was a child. It went against Nature and I'm happy for it. **We have been and will continue to fight and adapt Nature using our technology and intelligence**. (By "fighting Nature," **I don't mean destroying the rainforest**. I actually support conservation efforts and I think we can learn much from other species. What **I mean** is that **the human condition should supplant**, like it does to some degree, **what Nature intended** for us humans.) **When we win the battle against Nature we will not be humans anymore, we will be better than humans**. At present, **our top priority must be to fight aging, but** if we can achieve such lofty goal, **we will have a world of opportunities to upgrade ourselves using genetics, cybernetics, and nanotechnology**.

#### Object-oriented view of nature inevitable – concrete action key

Levy 99- PhD @ Centre for Critical Theory at Monash

Neil, “Discourses of the Environment,” ed: Eric Darier, p. 215

If the ‘technological fix’ is unlikely to be more successful than strategies of limitation of our use of resources, we are, nevertheless unable simply to leave the environment as it is. There is a real and pressing need for space, and more accurate, technical and scientific information about the non-human world. For we are faced with a situation in which the processes we have already set in train will continue to impact upon that world, and therefore us for centuries. It is therefore necessary, not only to stop cutting down the rain forests, but to develop real, concrete proposals for action, to reverse or at least limit the effects of our previous interventions. Moreover, there is another reason why our behavior towards the non-human cannot simply be a matter of leaving it as it is, at least in so far as our goals are not only environmental but also involve social justice. For if we simply preserve what remains to us of wilderness, of the countryside and of park land, we also preserve patterns of very unequal access to their resources and their consolations (Soper 1995: 207).in fact, we risk exacerbating these inequalities. It is not us, but the poor of Brazil, who will bear the brunt of the misery which would result from a strictly enforced policy of leaving the Amazonian rain forest untouched, in the absence of alternative means of providing for their livelihood. It is the development of policies to provide such ecologically sustainable alternatives which we require, as well as the development of technical means for replacing our current greenhouse gas-emitting sources of energy. Such policies and proposals for concrete action must be formulated by ecologists, environmentalists, people with expertise concerning the functioning of ecosystems and the impact which our actions have upon them. Such proposals are, therefore, very much the province of Foucault’s specific intellectual, the one who works ‘within specific sectors, at the precise points where their own conditions of life or work situate them’ (Foucault 1980g: 126). For who could be more fittingly described as ‘the strategists of life and death’ than these environmentalists? After the end of the Cold War, it is in this sphere, more than any other, that man’s ‘politics places his existence as a living being in question’ (Foucault 1976: 143). For it is in facing the consequences of our intervention in the non-human world that the hate of our species, and of those with whom we share this planet, will be decided?

### Framework 2AC

#### Nuke war outweighs structural violence – prioritizing structural violence makes preventing war impossible

Boulding 78 [Ken, is professor of economics and director, Center for Research on Conflict Resolution, University of Michigan, “Future Directions in Conflict and Peace Studies,” The Journal of Conflict Resolution, Vol. 22, No. 2 (Jun., 1978), pp. 342-354]

Galtung is very legitimately interested in problems of world poverty and the failure of development of the really poor. He tried to amalga- mate this interest with the peace research interest in the more narrow sense. Unfortunately, he did this by downgrading the study of inter- national peace, labeling it "negative peace" (it should really have been labeled "negative war") and then developing the concept of "structural violence," which initially meant all those social structures and histories which produced an expectation of life less than that of the richest and longest-lived societies. He argued by analogy that if people died before the age, say, of 70 from avoidable causes, that this was a death in "war"' which could only be remedied by something called "positive peace." Unfortunately, the concept of structural violence was broadened, in the word of one slightly unfriendly critic, to include anything that Galtung did not like. Another factor in this situation was the feeling, certainly in the 1960s and early 1970s, that nuclear deterrence was actually succeeding as deterrence and that the problem of nuclear war had receded into the background. This it seems to me is a most dangerous illusion and diverted conflict and peace research for ten years or more away from problems of disarmament and stable peace toward a grand, vague study of world developments, for which most of the peace researchers are not particularly well qualified. To my mind, at least, the quality of the research has suffered severely as a result.' The complex nature of the split within the peace research community is reflected in two international peace research organizations. The official one, the International Peace Research Association (IPRA), tends to be dominated by Europeans somewhat to the political left, is rather, hostile to the United States and to the multinational cor- porations, sympathetic to the New International Economic Order and thinks of itself as being interested in justice rather than in peace. The Peace Science Society (International), which used to be called the Peace Research Society (International), is mainly the creation of Walter Isard of the University of Pennsylvania. It conducts meetings all around the world and represents a more peace-oriented, quantitative, science- based enterprise, without much interest in ideology. COPRED, while officially the North American representative of IPRA, has very little active connection with it and contains within itself the same ideological split which, divides the peace research community in general. It has, however, been able to hold together and at least promote a certain amount of interaction between the two points of view. Again representing the "scientific" rather than the "ideological" point of view, we have SIPRI, the Stockholm International Peace Research Institute, very generously (by the usual peace research stand- ards) financed by the Swedish government, which has performed an enormously useful service in the collection and publishing of data on such things as the war industry, technological developments, arma- ments, and the arms trade. The Institute is very largely the creation of Alva Myrdal. In spite of the remarkable work which it has done, how- ever, her last book on disarmament (1976) is almost a cry of despair over the folly and hypocrisy of international policies, the overwhelming power of the military, and the inability of mere information, however good, go change the course of events as we head toward ultimate ca- tastrophe. I do not wholly share her pessimism, but it is hard not to be a little disappointed with the results of this first generation of the peace research movement. Myrdal called attention very dramatically to the appalling danger in which Europe stands, as the major battleground between Europe, the United States, and the Soviet Union if war ever should break out. It may perhaps be a subconscious recognition-and psychological denial-of the sword of Damocles hanging over Europe that has made the European peace research movement retreat from the realities of the international system into what I must unkindly describe as fantasies of justice. But the American peace research community, likewise, has retreated into a somewhat niggling scientism, with sophisticated meth- odologies and not very many new ideas. I must confess that when I first became involved with the peace research enterprise 25 years ago I had hopes that it might produce some- thing like the Keynesian revolution in economics, which was the result of some rather simple ideas that had never really been thought out clearly before (though they had been anticipated by Malthus and others), coupled with a substantial improvement in the information system with the development of national income statistics which rein- forced this new theoretical framework. As a result, we have had in a single generation a very massive change in what might be called the "conventional wisdom" of economic policy, and even though this conventional wisdom is not wholly wise, there is a world of difference between Herbert Hoover and his total failure to deal with the Great Depression, simply because of everybody's ignorance, and the moder- ately skillful handling of the depression which followed the change in oil prices in 1-974, which, compared with the period 1929 to 1932, was little more than a bad cold compared with a galloping pneumonia. In the international system, however, there has been only glacial change in the conventional wisdom. There has been some improvement. Kissinger was an improvement on John Foster Dulles. We have had the beginnings of detente, and at least the possibility on the horizon of stable peace between the United States and the Soviet Union, indeed in the whole temperate zone-even though the tropics still remain uneasy and beset with arms races, wars, and revolutions which we cannot really afford. Nor can we pretend that peace around the temper- ate zone is stable enough so that we do not have to worry about it. The qualitative arms race goes on and could easily take us over the cliff. The record of peace research in the last generation, therefore, is one of very partial success. It has created a discipline and that is something of long-run consequence, most certainly for the good. It has made very little dent on the conventional wisdom of the policy makers anywhere in the world. It has not been able to prevent an arms race, any more, I suppose we might say, than the Keynesian economics has been able to prevent inflation. But whereas inflation is an inconvenience, the arms race may well be another catastrophe. Where, then, do we go from here? Can we see new horizons for peace and conflict research to get it out of the doldrums in which it has been now for almost ten years? The challenge is surely great enough. It still remains true that war, the breakdown of Galtung's "negative peace," remains the greatest clear and present danger to the human race, a danger to human survival far greater than poverty, or injustice, or oppression, desirable and necessary as it is to eliminate these things. Up to the present generation, war has been a cost and an inconven- ience to the human race, but it has rarely been fatal to the process of evolutionary development as a whole. It has probably not absorbed more than 5% of human time, effort, and resources. Even in the twenti- eth century, with its two world wars and innumerable smaller ones, it has probably not acounted for more than 5% of deaths, though of course a larger proportion of premature deaths. Now, however, advancing technology is creating a situation where in the first place we are developing a single world system that does not have the redundancy of the many isolated systems of the past and in which therefore if any- thing goes wrong everything goes wrong. The Mayan civilization could collapse in 900 A.D., and collapse almost irretrievably without Europe or China even being aware of the fact. When we had a number of iso- lated systems, the catastrophe in one was ultimately recoverable by migration from the surviving systems. The one-world system, therefore, which science, transportation, and communication are rapidly giving us, is inherently more precarious than the many-world system of the past. It is all the more important, therefore, to make it internally robust and capable only of recoverable catastrophes. The necessity for stable peace, therefore, increases with every improvement in technology, either of war or of peacex

#### Reps don’t come first and don’t cause violence

**Rodwell, 5** [PhD candidate, Manchester, Jonathan, Trendy But Empty: A Response to Richard Jackson, http://www.49thparallel.bham.ac.uk/back/issue15/rodwell1.htm]

In this response I wish to argue that the Post-Structural analysis put forward by Richard Jackson is inadequate when trying to understand American Politics and Foreign Policy. The key point is that this is an issue of methodology and theory. I do not wish to argue that language is not important, in the current political scene (or indeed any political era) that would be unrealistic. One cannot help but be convinced that the creation of identity, of defining ones self (or one nation, or societies self) in opposition to an ‘other’ does indeed take place. Masses of written and aural evidence collated by Jackson clearly demonstrates that there is a discursive pattern surrounding post 9/11 U.S. politics and society. [i] Moreover as expressed at the start of this paper it is a political pattern and logic that this language is useful for politicians, especially when able to marginalise other perspectives. Nothing illustrates this clearer than the fact George W. Bush won re-election, for whatever the reasons he did win, it is undeniable that at the very least the war in Iraq, though arguable far from a success, at the absolute minimum did not damage his campaign. Additionally it is surely not stretching credibility to argue Bush performance and rhetoric during the immediate aftermath of the 9/11 attacks also strengthened his position. However, having said that, the problem is Jackson’s own theoretical underpinning, his own justification for the importance of language. If he was merely proposing that the understanding of language as one of many causal factors is important that would be fine. But he is not. The epistemological and theoretical framework of his argument means the ONLY thing we should look at is language and this is the problem.[ii] Rather than being a fairly simple, but nonetheless valid, argument, because of the theoretical justification it actually becomes an almost nonsensical. My response is roughly laid out in four parts. Firstly I will argue that such methodology, in isolation, is fundamentally reductionist with a theoretical underpinning that does not conceal this simplicity. Secondly, that a strict use of post-structural discourse analysis results in an epistemological cul-de-sac in which the writer cannot actually say anything. Moreover the reader has no reason to accept anything that has been written. The result is at best an explanation that remains as equally valid as any other possible interpretation and at worse a work that retains no critical force whatsoever. Thirdly, possible arguments in response to this charge; that such approaches provide a more acceptable explanation than others are, in effect, both a tacit acceptance of the poverty of force within the approach and of the complete lack of understanding of the identifiable effects of the real world around us; thus highlighting the contradictions within post-structural claims to be moving beyond traditional causality, re-affirming that rather than pursuing a post-structural approach we should continue to employ the traditional methodologies within History, Politics and International Relations. Finally as a consequence of these limitations I will argue that the post-structural call for ‘intertextuals’ must be practiced rather than merely preached and that an understanding and utilisation of all possible theoretical approaches must be maintained if academic writing is to remain useful rather than self-contained and narrative. Ultimately I conclude that whilst undeniably of some value post-structural approaches are at best a footnote in our understanding . The first major problem then is that historiographically discourse analysis is so capacious as to be largely of little use. The process of inscription identity, of discourse development is not given any political or historical context, it is argued that it just works, is simply a universal phenomenon. It is history that explains everything and therefore actually explains nothing. To be specific if the U.S. and every other nation is continually reproducing identities through ‘othering’ it is a constant and universal phenomenon that fails to help us understand at all why one result of the othering turned out one way and differently at another time. For example, how could one explain how the process resulted in the 2003 invasion of Iraq but didn’t produce a similar invasion of Afghanistan in 1979 when that country (and by the logic of the Regan administrations discourse) the West was threatened by the ‘Evil Empire’. By the logical of discourse analysis in both cases these policies were the result of politicians being able to discipline and control the political agenda to produce the outcomes. So why were the outcomes not the same? To reiterate the point how do we explain that the language of the War on Terror actually managed to result in the eventual Afghan invasion in 2002? Surely it is impossible to explain how George W. Bush was able to convince his people (and incidentally the U.N and Nato) to support a war in Afghanistan without referring to a simple fact outside of the discourse; the fact that a known terrorist in Afghanistan actually admitted to the murder of thousands of people on the 11h of Sepetember 2001. The point is that if the discursive ‘othering’ of an ‘alien’ people or group is what really gave the U.S. the opportunity to persue the war in Afghanistan one must surly wonder why Afghanistan. Why not North Korea? Or Scotland? If the discourse is so powerfully useful in it’s own right why could it not have happened anywhere at any time and more often? Why could the British government not have been able to justify an armed invasion and regime change in Northern Ireland throughout the terrorist violence of the 1980’s? Surely they could have just employed the same discursive trickery as George W. Bush? Jackson is absolutely right when he points out that the actuall threat posed by Afghanistan or Iraq today may have been thoroughly misguided and conflated and that there must be more to explain why those wars were enacted at that time. Unfortunately that explanation cannot simply come from the result of inscripting identity and discourse. On top of this there is the clear problem that the consequences of the discursive othering are not necessarily what Jackson would seem to identify. This is a problem consistent through David Campbell’s original work on which Jackson’s approach is based[iii]. David Campbell argued for a linguistic process that ‘always results in an other being marginalized’ or has the potential for ‘demonisation’[iv]. At the same time Jackson, building upon this, maintains without qualification that the systematic and institutionalised abuse of Iraqi prisoners first exposed in April 2004 “is a direct consequence of the language used by senior administration officials: conceiving of terrorist suspects as ‘evil’, ‘inhuman’ and ‘faceless enemies of freedom creates an atmosphere where abuses become normalised and tolerated”[v]. The only problem is that the process of differentiation does not actually necessarily produce dislike or antagonism. In the 1940’s and 50’s even subjected to the language of the ‘Red Scare’ it’s obvious not all Americans came to see the Soviets as an ‘other’ of their nightmares. And in Iraq the abuses of Iraqi prisoners are isolated cases, it is not the case that the U.S. militarily summarily abuses prisoners as a result of language. Surely the massive protest against the war, even in the U.S. itself, is also a self evident example that the language of ‘evil’ and ‘inhumanity’ does not necessarily produce an outcome that marginalises or demonises an ‘other’. Indeed one of the points of discourse is that we are continually differentiating ourselves from all others around us without this necessarily leading us to hate fear or abuse anyone.[vi] Consequently, the clear fear of the Soviet Union during the height of the Cold War, and the abuses at Abu Ghirab are unusual cases. To understand what is going on we must ask how far can the process of inscripting identity really go towards explaining them? As a result at best all discourse analysis provides us with is a set of universals and a heuristic model.

### Fem 2AC

#### They are fundamentally wrong—gendered binaries don’t organize the world

**Hooper 1** Charlotte (University of Bristol research associate in politics), *Manly States: Masculinities, International Relations, and Gender Politics* pp 45-46.

Spike Peterson and Anne Sisson Runyan (1993), in their discussion of gendered dichotomies, appear to drop Lacanian psychoanalytic discourse as an explanation for gendered dichotomies in favor of a more straightforward- ly political account.14Gendered dichotomies, rather than uniformly con- structing gendered social relations through universal psychoanalytic mecha- nisms, are seen more ambiguously, as playing a dual role. Where gendered dichotomies are used as an organizing principle of social life (such as in the gendered division of labor) they help to construct gender differences and in- equalities and thus are constitutive of social reality, but in positing a grid of polar opposites, they also serve to obscure more complex relationships, commonalties, overlaps, and intermediate positions (Peterson and Runyan 1993, 24–25). Elaborating on this view, it can be argued that gendered dichotomies are in part ideological tools that mystify, masking more complex social realities and reinforcing stereotypes. On one level, they do help to produce real gen- der differences and inequalities, when they are used as organizing principles that have practical effects commensurate with the extent that they become embedded in institutional practices, and through these, human bodies. They constitute one dimension in the triangular nexus out of which gender identities and the gender order are produced. But at the same time, institutional practices are not always completely or unambiguously informed by such dichotomies, which may then **operate to obscure more complex relationships**. It is a mistake to see the language of gendered dichotomies as a uniﬁed and totalizing discourse that dictates every aspect of social practice to the extent that we are coherently produced as subjects in its dualistic image. As well as the disruptions and discontinuities engendered by the intersections and interjections of other discourses (race, class, sexuality, and so on) **there is always room for evasion, reversal, resistance, and dissonance** between rhetoric, practice, and embodiment, as well as reproduction of the symbolic order, as identities are negotiated in relation to all three dimensions, in a variety of **complex and changing circumstances**. On the other hand, the symbolic gender order does inform practice, and our subjectivities are produced in relation to it, so to dismiss it as performing only an ideological or propagandistic role is also too simplistic.

#### No impact

**Goldstein 1**—Professor of International Relations at American University, 2001 (Joshua S., War and Gender: How Gender Shapes the War System and Vice Versa, pp.411-412)

I began this book hoping to contribute in some way to a deeper understanding of war – an understanding that would improve the chances of someday achieving real peace, by deleting war from our human repertoire. In following the thread of gender running through war, I found the deeper understanding I had hoped for – a multidisciplinary and multilevel engagement with the subject. Yet I became somewhat more pessimistic about how quickly or easily war may end. The war system emerges, from the evidence in this book, as relatively ubiquitous and robust. Efforts to change this system must overcome several dilemmas mentioned in this book. First, peace activists face a dilemma in thinking about causes of war and working for peace. Many peace scholars and activists support the approach, “if you want peace, work for justice.” Then, if one believes that sexism contributes to war, one can work for gender justice specifically (perhaps among others) in order to pursue peace. This approach brings strategic allies to the peace movement (women, labor, minorities), but rests on the assumption that injustices cause war. The evidence in this book suggests that causality runs at least as strongly the other way. War is not a product of capitalism, imperialism, gender, innate aggression, or any other single cause, although all of these influence wars’ outbreaks and outcomes. Rather, war has in part fueled and sustained these and other injustices. So, “if you want peace, work for peace.” Indeed, if you want justice (gender and others), work for peace. Causality does not run just upward through the levels of analysis, from types of individuals, societies, and governments up to war. It runs downward too. Enloe suggests that changes in attitudes towards war and the military may be the most important way to “reverse women’s oppression.” The dilemma is that peace work focused on justice brings to the peace movement energy, allies, and moral grounding, yet, in light of this book’s evidence, the emphasis on injustice as the main cause of war seems to be empirically inadequate.

#### Violence and domination are inevitable

**Thayer 4** – Thayer has been a Fellow at the Belfer Center for Science and International Affairs at the Kennedy School of Government at Harvard University and has taught at Dartmouth College and the University of Minnesota [*Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict*, University of Kentucky Press, 2004, pg. 75-76 //adi]

The central issue here is what causes states to behave as offensive realists predict. Mearsheimer advances a powerful argument that anarchy is the fundamental cause of such behavior. The fact that **there is no world government** compels the leaders of states to take steps to ensure their security, such as striving to have a powerful military, **aggressing when forced to** do so, and forging and maintaining alliances. This is what neorealists call **a self-help system**: leaders of states arc forced to take these steps because nothing else can guarantee their security in the anarchic world of international relations. I argue that evolutionary theory also offers a fundamental cause for offensive realist behavior. Evolutionary theory explains why individuals are motivated to act as offensive realism expects, whether an individual is a captain of industry or a conquistador. My argument is that anarchy is even more important than most scholars of international relations recognize. The human environment of evolutionary adaptation was **anarchic**; our ancestors lived in a state of nature in which resources were poor and dangers from other humans and the environment were great—so great that it is truly remarkable that a mammal standing three feet high—without claws or strong teeth, not particularly strong or swift—survived and evolved to become what we consider human. Humans endured because natural selection gave them the right behaviors to last in those conditions. This environment produced the behaviors examined here: egoism, domination, and the in-group/out-group distinction. These specific traits arc sufficient to explain why leaders will behave, in the proper circumstances, as offensive realists expect them to behave. That is, **even if they must hurt other humans** or risk injury to themselves, they will strive to **maximize their power**, defined as either control over others (for example, through wealth or leadership) or control over ecological circumstances (such as meeting their own and their family's or tribes need for food, shelter, or other resources).

#### The alternative alone gets coopted and is based on flawed scholarship

**Caprioli, 04** (“Feminist IR Theory and Quantitative Methodology: A Critical Analysis” Mary Caprioli, Dept. of Political Science, University of Tennessee. International Studies Review. Volume 42 Issue 1 Page 193-197, March 2004. http://www.blackwell-synergy.com/links/doi/10.1111/0020-8833.00076.) AK

Conventional feminist IR scholars misrepresent the field of international relations in arguing that IR scholarship as popularly accepted excludes alternative explanations of state behavior, including feminist inquiry, that go beyond structural, state-focused models. Feminist IR theorists, among others, critique the IR field for its state-centric approach and argue that "a world of states situated in an anarchical international system leaves little room for analyses of social relations, including gender relations" (Tickner 2001:146). As a result, they appear to set up a straw man by refusing to recognize the variety within "conventional" IR research. Indeed, as Jack Levy (2000) has observed, a significant shift to societal-level variables has occurred, partly in response to the decline in the systemic imperatives of the bipolar era. Certainly the democratic peace literature, particularly its normative explanation (Maoz and Russett 1993; Dixon 1994), among other lines of inquiry, recognizes the role of social relations in explaining state behavior. The normative explanation for the democratic peace thesis emphasizes the societal level values of human rights, support for the rule of law, and peaceful conflict resolution in explaining the likelihood of interstate conflict. Furthermore, dyadic tests of the democratic peace thesis rely "on an emerging theoretical framework that may prove capable of incorporating the strengths of the currently predominant realist or neorealist research program, and moving beyond it" (Ray 2000:311). In addition, theorizing and research in the field of ethnonationalism has highlighted connections that domestic ethnic discrimination and violence have with state behavior at the international level (Gurr and Harff 1994; Van Evera 1997; Caprioli and Trumbore 2003a, 2003b). Contrary to the argument that conventional IR theory excludes feminist inquiry, space exists within the field of international relations **for feminist inquiry** even allowing for a state-centric focus, just as room exists for scholars interested in exploring the democratic peace and ethnonationalism. International relations feminists make the same mistake that they accuse IR scholars of making: narrowing the space for various worldviews, thereby creating competition and a sense of exclusion among the so-called others. If the role of "feminist theory is to explain women's subordination, or the unjustified asymmetry between women's and men's social and economic positions, and to seek prescriptions for ending it" (Tickner 2001:11), then feminist IR scholarship ought to allow for an explanation of how women's subordination or inequality has an impact on state behavior, assuming a state- centric focus, while at the same time challenging the predetermination of a structural analysis. If domestic inequality does affect state behavior, or even perpetuates the existence of states, then policy prescriptions should be sought.

### Prolif 2AC

#### No lash out – institutional safeguards check

Buchanan 7 [Allen, Professor of Philosophy and Public Policy at Duke, 2007, Preemption: military action and moral justification, pg. 128]

The intuitively plausible idea behind the 'irresponsible act' argument is that, other things being equal, the higher the stakes in acting and in particular the greater the moral risk, the higher are the epistemic requirements for justified action. The decision to go to war is generally a high stakes decision par excellence and the moral risks are especially great, for two reasons. First, unless one is justified in going to war, one's deliberate killing of enemy combatants will he murder, indeed mass murder. Secondly, at least in large-scale modem war, it is a virtual certainty that one will kill innocent people even if one is justified in going to war and conducts the war in such a way as to try to minimize harm to innocents. Given these grave moral risks of going to war, quite apart from often substantial prudential concerns, some types of justifications for going to war may simply be too subject to abuse and error to make it justifiable to invoke them. The 'irresponsible act' objection is not a consequentialist objection in any interesting sense. It does not depend upon the assumption that every particular act of going to war preventively has unacceptably bad consequences (whether in itself or by virtue of contributing lo the general acceptance of a principle allowing preventive war); nor does it assume that it is always wrong lo rely on a justification which, if generally accepted, would produce unacceptable consequences. Instead, the "irresponsible act' objection is more accurately described as an agent-centered argument and more particularly an argument from moral epistemic responsibility. The 'irresponsible act' objection to preventive war is highly plausible if— but only if—one assumes that the agents who would invoke the preventive-war justification are, as it were, on their own in making the decision to go to war preventively. In other words, the objection is incomplete unless the context of decision-making is further specified. Whether the special risks of relying on the preventive-war justification are unacceptably high will depend, inter alia, upon whether the decision-making process includes effective provisions for redu­cing those special risks. Because the special risks are at least in significant part epistemic—due to the inherently speculative character of the preventive war-justification—the epistemic context of the decision is crucial. Because institutions can improve the epistemic performance of agents, it is critical to know what the institutional context of the preventive-war decision is, before we can regard the 'irresponsible agent' objection as conclusive. Like the 'bad practice' argument, this second objection to preventive war is inconclusive because it does not consider— and rule out—the possibility that well-designed institutions for decision-making could address the problems that would otherwise make it irresponsible for a leader to invoke the preventive-war justification.

#### Prolif impacts outweigh the K and flip ethics

Ford 11 [Chris Ford, Senior Fellow at the Hudson Institute in Washington, D.C. He previously served as U.S. Special Representative for Nuclear Nonproliferation, Principal Deputy Assistant Secretary of State, and General Counsel to the U.S. Senate Select Committee on Intelligence, 1/10/11, Havea and Have-Nots: "Unfairness in nuclear Weapons possession," [www.newparadigmsforum.com/NPFtestsite/?p=658](http://www.newparadigmsforum.com/NPFtestsite/?p=658)]

First, however, let’s provide some context. As I noted above, it is fascinating that in the long history of military technological have/have not dynamics, the international politics of nuclear weaponry has acquired such a strong flavor of moral critique. To my knowledge, after all, one did not see Xiongnu politics emphasizing how darned unfair it was of those nasty Chinese Emperors to monopolize the presumed secrets of China’s bingjia strategic literature. Nor does the unfairness of Byzantine efforts to control the recipe for Greek Fire seem to have become a prevalent trope of Frankish or Persian diplomacy. “Have nots” have surely always coveted powerful tools possessed by the “haves,” or at least wished that the “haves” did not possess them. It seems pretty unusual, however, for non-possessors to articulate such understandable envy and resentment in the moral language of “unfairness,” and to assume that this presumed injustice should motivate the “haves” to change their behavior. This argument seems to be a curiously modern phenomenon.¶ One might respond that the very specialness of nuclear weapons makes such a position appropriate. After all, while a local monopoly on iron swords may have given the Vikings some advantage in skirmishes with Native Americans in what the Norsemen called Vinland, such technological asymmetry was not strategically decisive. (Indeed, the Vikings seem ultimately to have been pushed out of the New World entirely.) If iron had threatened to offer the Vikings an insuperable advantage, would the Skraelings have been justified in developing a moral language of “have/have not” resentment that demanded either the sharing of iron weaponry or Viking disarmament in the name of achieving a global “iron zero”? I’m skeptical, but for the sake of argument let’s say “maybe.”¶ The argument that nuclear weapons are “special,” however, is a two-edged sword. Perhaps they are indeed so peculiarly potent and militarily advantageous that their asymmetric possession is sufficiently “unfair” to compel sharing or disarmament. Such an argument, however, sits only awkwardly – to say the least – with the simultaneous claim by many advocates of the “have/have not” critique that nuclear weapons have no real utility in the modern world and can therefore safely be abandoned by their possessors. After all, it is hard to paint nuclear weapons as being strategically decisive and useless at the same time. (If they are indeed useless, the conclusion of “unfairness” hardly sounds very compelling. If they aren’t useless, however, it may be appropriately hard to abolish them.)¶ More importantly, any argument about the destructively “special” character of nuclear weaponry cuts against the “unfairness critique” in that it is this very specialness that seems to rob the “have/have not” issue of its moral relevance. Unlike iron swords, the bingjia literature, Greek Fire, or essentially all other past military technologies the introduction of which produced global control/acquisition dynamics, nuclear weapons have introduced **existential questions** about the future of human civilization which **utterly swamp** the conventional playground morality of unfair “have/have not” competition**.** No prior technology held the potential to destroy humanity**,** making nuclear weapons – with the possible exception of certain techniques of biological weaponry – a sui generis case to which the conventional “unfairness” critique simply does not very persuasively apply.¶III. Implications¶ Let me be clear about this. The moral critique of nuclear weapons possession may yet speak to the issue of whether anyone should have them. (This is not the place for a discussion of the feasibility of the remedies proposed by the disarmament community, but let us at least acknowledge the existence of a real moral issue.) But this matter has nothing to do with “unfairness” per se – and to the extent that it purports to, one should give it little credence. If indeed nuclear weapons do menace the survival of humanity, it is essentially irrelevant whether their possession is “unfairly” distributed – and it is certainly no solution to make the global balance of weaponry more “fair” by allowing more countries to have them. (Disarmament advocates hope to address the fairness problem by eliminating nuclear weapons, of course, but this is just icing. Disarmament is almost never articulated as being driven primarily by fairness; the critical part of that argument is instead consequentialist, stressing the dangers that any nuclear weapons are said to present.) As a moral critique, in other words, the fair/unfair dichotomy fails to speak intelligibly to the world’s nuclear dilemma. It isn’t really about “fairness” at all.¶ Given the entanglement of nuclear weapons issues with quasi-existential questions potentially affecting the survival of millions or perhaps even billions of people, moreover, it stands to reason that an “unfair” outcome that nonetheless staves off such horrors is a **perfectly good solution**. On this scale, one might say, non-catastrophe entirely trumps accusations of “unfairness.” Questions of stability are far more important than issues of asymmetric distribution.¶ This, of course, has powerful implications for nonproliferation policy, because pointing out the hollowness of the “unfairness” argument as applied to nuclear weapons suggests the moral sustainability of nonproliferation even if complete nuclear disarmament cannot be achieved and the world continues to be characterized by inequalities in weapons possession. We forget this at our collective peril.¶ Don’t get me wrong. “Unfairness” arguments will presumably continue to have a political impact upon the diplomacy of nuclear nonproliferation, either as a consequence of genuine resentment or as a cynical rationalization for the destabilizing pursuit of dangerous capabilities. (Indeed, one might even go so far as to suspect that the emergence of the “unfairness” critique in modern diplomatic discourse is in some sense partly the result of how morally compelling nonproliferation is, in this context, irrespective of the “fairness” of “have/have not” outcomes. Precisely because the moral case for nonproliferation-driven inequality is so obvious and so compelling if such imbalance serves the interests of strategic stability, perhaps it was necessary to develop a new rationale of “fairness” to help make proliferation aspirations seem more legitimate. Skraelings, one imagines, did not need an elaborate philosophy of “fairness” in order to justify trying to steal iron weapons; the desirability of such tools was simply obvious, and any effort to obtain them unsurprising and not in itself condemnable.) But even in this democratic and egalitarian age, merely to incant the mantra of “unfairness” – or to inveigh against the existence of “haves” when there also exist “have nots” – is not the same thing as having a compelling moral argument. Indeed, I would submit that we lose our moral bearings if we allow “unfairness” arguments to distract us from what is really important here: substantive outcomes in the global security environment.¶ “Unfairness,” in other words, is an overrated critique, and “fairness” is an overrated destination. At least where nuclear weapons are concerned, there are more important considerations in play. Let us not forget this.

#### Permutation do both

#### Prolif exacerbates inequality—turns the K

Biswas 1 [Shampa Biswas, Whitman College Politics Professor, December 2001, “Nuclear apartheid" as political position: race as a postcolonial resource?, Alternatives 26.4]

At one level, as Partha Chatterjee has pointed out, the concept of apartheid relates to a discourse about "democracy." (49) To use apartheid to designate the unequal distribution of nuclear resources then is also simultaneously to draw attention to the undemocratic character of international relations--or, more literally, the exclusion of a group of people from some kind of legitimate and just entitlement. More specifically, to talk in terms of nuclear haves and have-nots is to talk in terms of a concept of democratic justice based on the "possession" (or lack thereof) of something. "Apartheid," as Sumit Sarkar points out, "implies as its valorised Other a notion of equal rights." (50) But that this something is "nuclear weapons" complicates the issue a great deal. If the vision of democracy that is implicit in the concept of nuclear apartheid implies a world of "equal possession" of nuclear weapons, a position implied in the Indian decision to test, that is a frightening thought indeed. Yet surely even India does not subscribe to that vision of democracy. "Would India," asks Sarkar, "welcome a nuclearised Nepal or Bangladesh?" (51) If Jaswant Singh is serious that "the country"s national security in a world of nuclear proliferation lies either in global disarmament or in exercise of the principle of equal and legitimate security for all," (52) then it should indeed support the "equal and legitimate" nuclearization of its neighbors, which is extremely unlikely given its own demonstrated hegemonic aspirations in the South Asian region. (53) Further, if India does indeed now sign the NPT and the CTBT, and sign them in the garb of a nuclear power as it wants to do, what does that say about its commitment to nuclear democracy? Even if India and Pakistan were to be included in the treaties as NWSs, all that would do is expand the size of the categories, not delegitimize the unequal privileges and burdens written into the categories themselves. ¶ Indian military scientists claim that India has now accumulated enough data for reliable future weaponization without explosive testing, and Indian leaders have, since the tests, indicated more willingness to sign the CTBT. India has already voluntarily accepted restraints on the exports of nuclear-related materials, as required by the NPT. According to an Indian strategic analyst with respect to negotiation of the Fissile Material Cut-Off Treaty, the next major arms-control treaty to be discussed in the Conference on Disarmament, "The key question in relation to the FMCT is not if it is global and nondiscriminatory. It is whether India has sufficient nuclear material at hand to maintain a credible nuclear deterrent." (54) If all India ever wanted was to move from the side of the discriminated to the side of the discriminators, so much for speaking for democratic ideals through the symbol of nuclear apartheid. (55) ¶ There are several troublesome issues here with respect to the concept of "nuclear democracy." On the one hand, it seems clear that the widespread proliferation of nuclear weapons sits ill at ease with any notion of democratic entitlement. It seems that rather than equalizing the possession of nuclear weapons, **it would be equalizing the dispossession of nuclear weapons that entails a more compelling democratic logic.** (56) On the other hand, there is also the question of the fundamentally undemocratic nature of nuclear weapons themselves. At one level, the sheer scope of such weapons to kill and destroy indiscriminately (a democratic logic here?) renders any laws of 'just war" moot. As Braful Bidwai and Achin Vanaik point out, the very use of nuclear weapons would be to break the principle of proportionate use of force, and such weapons clearly cannot be made to distinguish between combatants and noncombatants as required in the just conduct of war. (57) ¶ In this context, it might be worth pointing to the 1996 ruling by the International Court of Justice at the Hague that stipulated that the "the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict and, in particular, the principles and rules of humanitarian law." (58) If the regulation of war can be considered a democratic exercise, then nuclear weapons by their very nature make that exercise futile. At another level is the secrecy that has historically and perhaps necessarily accompanied the development of nuclear-weapons programs, relegated to an aspect of the national-security state that is immunized from democratic scrutiny. Chatterjee argues that nuclear weapons involve a technology that is intrinsically undemocratic -- both domestically and internationally -- since the enormous destructive potential that they embody requires a great deal of secrecy and inaccessibility. (59) Itty Abraham's excellent analysis shows how the intertwined emergence of the independent Indian state and the atomic-energy establishment legally foreclosed the democratic and institutional oversight of the entire atomic-energy enterprise because of its proximity to national security. In other words, the state sponsorship and control of nuclear science, and indeed its constitution in and through nuclear science, makes both science and the state susceptible to undemocratic governance. (60)

#### Turns orientalism

Biswas 1 [Shampa Biswas, Whitman College Politics Professor, December 2001, “Nuclear apartheid" as political position: race as a postcolonial resource?, Alternatives 26.4]

Where does that leave us with the question of "nuclear apartheid"? As persuasive as the nuclear-apartheid argument may be at pointing to one set of global exclusions, its complicity in the production of boundaries that help sustain a whole other set of exclusions also makes it suspect. It is precisely the resonances of the concept of apartheid, and the strong visceral response it generates, that gives it the ability to bound and erase much more effectively. In one bold move, the nuclear-apartheid argument announces the place of nuclear weaponry as the arbiter of global power and status, and how its inaccessibility or unavailability to a racialized Third World relegates it forever to the dustheap of history. It thus makes it possible for "Indians" to imagine themselves as a "community of resistance." However, with that same stroke, the nuclear-apartheid position creates and sustains yet another racialized hierarchy, bringing into being an India that is exclusionary and oppressive. And it is precisely the boldness of this racial signifier that carries with it the ability to erase, mask, and exclude much more effectively. In the hands of the BJP, the "nuclear apartheid" position becomes dangerous--because the very boldness of this racial signifier makes it possible for the BJP to effect closure on its hegemonic vision of the Hindu/Indian nation. Hence, this article has argued, in taking seriously the racialized exclusions revealed by the use of the "nuclear apartheid" position at the international level, one must simultaneously reveal another set of racialized exclusions effected by the BJP in consolidating its hold on state power. I have argued that comprehending the force and effect of the invocation of "race" through the nuclear-apartheid position means to understand this mutually constitutive co-construction of racialized domestic and international hierarchical orders.

### Civilization 2AC

Alt fails ----

#### Leads to massive die off and environmental destruction

Lewis ‘94

(Martin, Lecturer in History and Dir. IR @ Stanford, “Green Delusions”, p. 8, Google Books)

Finally, the radical green movement threatens nature by advocating a return to the land, seeking to immerse the human community even more fully within the intricate webs of the natural world. Given the present human population, this is hardly possible, and even if it were to occur it would result only in accelerated destruction. Ecological philosophers may argue that we could follow the paths of the primal peoples who live in intrinsic harmony with nature, but they are mistaken. Tribal groups usually do live lightly on the earth, but often only because their population densities are low. To return to preindustrial “harmony” would necessarily entail much more than merely decimating the human population. Yet unless our numbers could be reduced to a small fraction of present levels, any return to nature would be an environmental catastrophe. The more the human presence is placed directly on the land and the more immediately it is provisioned from nature, the fewer resources will be available for non-human species. If all Americans were to flee from metropolitan areas, rural populations would soar and wildlife habitat would necessarily diminish. An instructive example of the deadly implications of returning to nature may be found when one considers the issue of fuel. Although more common in the 1970s than the 1990s, “split wood not atoms” is still one of the green radicals’ favored credos. To hold such a view one must remain oblivious to the clearly devastating consequences of wood burning, including suffocating winter air pollution in the enclosed basins of the American West, widespread indoor carbon monoxide poisoning, and the ongoing destruction of the oak woodlands and savannahs of California. If we were all to split wood, the United States would be a deforested, soot-choked wasteland within a few decades. To be sure, the pollution threat of wood stoves can be mitigated by the use of catalytic converters, but note that these are technologically sophisticated devices developed by capitalist firms. If the most extreme version of the radical green agenda were to be fully enacted without a truly massive human die-off first, forests would be stripped clean of wood and all large animals would be hunted to extinction by hordes of neo-primitives desperate for food and warmth. If, on the other hand, eco-extremeists were to succeed only in paralyzing the economy’s capacity for further research, development, and expansion, our future could turn out to be reminiscent of the environmental nightmare of Poland in the 1980s, with a stagnant economy continuing to rely on outmoded, pollution-belching industries. A throttled steady-state economy would simply lack the resources necessary to create an environmentally benign technological base for a populace that shows every sign of continuing to demand electricity, hot water, and other conveniences. Eastern Europe shows well the environmental devastation that occurs when economic growth stalls out in an already industrialized society.

#### No one will ever support it

Aligica ‘3

(Paul, Fellow @ Mercatus Center at George Mason U. and Adjunct Fellow @ Hudson Institute, “The Great Transition and the Social Limits to Growth: Herman Kahn on Social Change and Global Economic Development”, April 21, http://www.hudson.org/index.cfm?fuseaction=publication\_details&id=2827)

Stopping things would mean if not to engage in an experiment to change the human nature, at least in an equally difficult experiment in altering powerful cultural forces: "We firmly believe that despite the arguments put forward by people who would like to 'stop the earth and get off,' it is simply impractical to do so. Propensity to change may not be inherent in human nature, but it is firmly embedded in most contemporary cultures. People have almost everywhere become curious, future oriented, and dissatisfied with their conditions. They want more material goods and covet higher status and greater control of nature. Despite much propaganda to the contrary, they believe in progress and future" (Kahn, 1976, 164). As regarding the critics of growth that stressed the issue of the gap between rich and poor countries and the issue of redistribution, Kahn noted that what most people everywhere want was visible, rapid improvement in their economic status and living standards, and not a closing of the gap (Kahn, 1976, 165). The people from poor countries have as a basic goal the transition from poor to middle class. The other implications of social change are secondary for them. Thus a crucial factor to be taken into account is that while the zero-growth advocates and their followers may be satisfied to stop at the present point, most others are not. Any serious attempt to frustrate these expectations or desires of that majority is likely to fail and/or create disastrous counter reactions. Kahn was convinced that "any concerted attempt to stop or even slow 'progress' appreciably (that is, to be satisfied with the moment) is catastrophe-prone". At the minimum, "it would probably require the creation of extraordinarily repressive governments or movements-and probably a repressive international system" (Kahn, 1976, 165; 1979, 140-153). The pressures of overpopulation, national security challenges and poverty as well as the revolution of rising expectations could be solved only in a continuing growth environment. Kahn rejected the idea that continuous growth would generate political repression and absolute poverty. On the contrary, it is the limits-to-growth position "which creates low morale, destroys assurance, undermines the legitimacy of governments everywhere, erodes personal and group commitment to constructive activities and encourages obstructiveness to reasonable policies and hopes". Hence this position "increases enormously the costs of creating the resources needed for expansion, makes more likely misleading debate and misformulation of the issues, and make less likely constructive and creative lives". Ultimately "it is precisely this position the one that increases the potential for the kinds of disasters which most at its advocates are trying to avoid" (Kahn, 1976, 210; 1984).

#### Perm – do both – It solves ---- we need to manage the transition

Heinberg ‘4

(Richard, Member of Core Faculty @ New College of California, “Power Down: Options and Actions for a Post-Carbon World”, p. 102)

The perceptive reader will likely already have noted that an effective Powerdown strategy is bound to encounter a nasty paradox. On one hand, the aim of the process must be to reduce the scale of human economic activity, and eventually that of effective political organization. As fossil fuels become less available, globalization based on the intercontinental distribution of resources and manufactured products will contract; ultimately, only a policy of re-localization will permit the survival of a functional social order. At the same time, the modern nation state — which emerged as a political entity during the industrial revolution as the result of growing communications and transportation networks — will likely become unworkable. Political power will necessarily devolve to a local, perhaps bioregional scale. However, as we have just seen, in the interim it will also be necessary for existing national governments to take forceful and effective charge of their economies in such a way as to preserve social order while reversing the trend of industrial growth; replacing their monetary systems; reducing economic inequality; and supplying public education about sustainability on an immense scale.

#### Sustainable society is possible ---- 100% efficient recycling prevents collapse

Ayres in ‘99

(Robert, Center for Management of Environmental Resources, Ecological Economics, “The second law, the fourth law, recycling and limits to growth”, 29:3, June, Science Direct)

So, although it is strictly irrelevant to this paper, I will digress briefly. I disagree with the solar skeptics, both for theoretical and practical reasons. Solar heat or solar electricity are not different in kind from the heat or power obtained from fossil fuels: what matters is the fraction that can be utilized to perform useful work (i.e. availability). The magnitude of the resource is nearly unlimited. The biosphere already captures extremely large amounts of solar energy, even in comparison with industrial use. But plants absorb only 0.12% of solar insolation, and only 1–5% of that amount is stored as biomass (the rest is dissipated by evapotranspiration).5 There are no fixed minimum material requirements for solar collectors. It is true that solar energy is comparatively ‘dilute' at the earth's surface. But this does not necessarily require huge specialized structures, as skeptics seem to assume. Already, photovoltaic collectors have been demonstrated utilizing extremely thin films, approaching monomolecular layers. Conversion efficiency is no problem.6 Collectors can be integrated into buildings and other fixed structural surfaces. Eventually, they can probably be built into strong but flexible fabrics that could be transported easily like bolts of cloth and simply unrolled at the point of use. Energy payback (the amount of energy obtained compared to the amount required for production) was arguably less than unity for prototypes in the early 1970s (when G-R wrote), but progress since then has been extraordinarily rapid. Paybacks are expected to reach ten or more in the very near future. There is no reason why paybacks should not continue to rise for many years to come. Modern biotechnology may well also be able to improve on nature's performance in photosynthesis. But there are two key feature of any materials recycling system that will not change. First, it is not possible for all of the critical resource to be utilized actively and also continuously recycled in a steady state system. There must be one (or more) inactive reservoirs or ‘wastebaskets' for high entropy wastes. Second, in a steady state the active/inactive concentration ratios can be arbitrarily high, depending on the available exergy flux from outside the system. The most important implication for the real world is that a ‘spaceship economy' (with total recycling of critical materials) is perfectly consistent with the second law of thermodynamics, provided only that a sufficient exergy flux is available from outside the system (e.g. from the sun). This contradicts G-R's thesis of a ‘fourth law' of thermodynamics and its suggestion of inevitable decline and collapse, perhaps within a few hundred years. It follows that G-R's ‘fund-flow' framework for the analysis of a steady-state recycling economy (Georgescu-Roegen, N., 1979b. Energy analysis and economic valuation. South. Econ. J. 95–105.Georgescu-Roegen, 1979b) is fundamentally faulty (see A). It requires a slight (but critical) modification. The original version defines only three ‘funds'—corresponding to ‘factors of production'—namely people, produced capital and Ricardian land. The problem this creates is that recycling is implicitly assumed to be an instantaneous (albeit energy- and resource-consuming) process converting wastes back into recycled active materials. No ‘fund' (or reservoir) of inactive wastes is allowed for.

#### 2000 story building solves ---- we can support 60 quadrillion people

Fremlin in ‘64

(John, Prof. Emeritus Physics @ Birmingham U., New Scientist, “How Many People Can the World Support?” 415:285-287, http://www.clay.smith.name/Population.doc)

The world population is now about 3,000 million and is increasing at a rate corresponding to a doubling in 37 years. In view of the increasing importance attached to the immediate effects of the rapid growth in human numbers, it is of interest to examine ultimate technical limits to this growth. Traditionally, these limits have usually been regarded as fixed by possible food supplies. Although, in practice, at least in historical times, the actual limiting factor has more often been disease. Diseases are now nearly, and will soon be entirely, eliminated as effective controllers of population growth but it is not at all clear that difficulties in food production will take their place. It is true that there is a limit to the improvement of agricultural output by application of existing scientific knowledge, but by the time this limit is reached other methods of food-production will have been devised. In this article I shall explore the possibility that the real limits are physical rather than biological. I shall assume throughout an effective degree of world cooperation in the application of food technology, etc. This is quite evidently essential if the maximum world population is to be reached. There are of course many ways of not reaching the maximum, but none of these will be discussed here. In order to give a time scale, it is supposed that the rate of increase of population remains constant at the present value -- that is to say, doubling every 37 years. In fact the rate is itself accelerating, so that, in the absence of limitations, this time scale will be too long. Stage 1: up to 400,000 million in 260 years' time Using existing crop plants and methods it may not be practicable to produce adequate food for more than four doublings of the world population, though the complete elimination of all land wildlife, the agricultural use of roofs over cities and roads, the elimination of meat-eating and the efficient harvesting of sea food might allow two or three further doublings -- say seven in all. That would give us, with the present doubling time of 37 years, 260 years to develop less conventional methods, and would allow the population of the world to increase to about 130 times its present size, or about 400,000 million. Stage 2: up to 3 million million in 370 years' time The area of ice-free sea is some three times that of land. Photosynthesis by single-celled marine organisms may be more efficient than that of the best land plants. If organisms could be found capable of the theoretical maximum efficiency (8 percent of total solar radiation, according to A. A. Niciporovic) we should gain a factor of three in yield. We could then double our numbers a further three more times if all the wildlife in the sea, too, was removed and replaced by the most useful organisms growing under controlled conditions, with the optimum concentration of carbonates, nitrates and minerals. (Of course a reserve of specimens of potentially useful species could be preserved, perhaps in a dormant state.) Again, for maximum efficiency we must harvest and consume directly the primary photosynthesis organisms, rather than allow the loss of efficiency involved in the food chains leading to such secondary organisms as zooplankton or fish. By this stage, we should have had ten doublings, which at the present rate would take some 370 years, with a final world population of 3 million million. Since the world's surface (land and sea) is 500 million million square meters, each person would have a little over 160 square meters for his maintenance-about a thirtieth of an acre-which does not seem unreasonable by more than a factor of two, so long as no important human activity other than food production takes place on the surface. No serious shortages of important elements need be envisaged so far, though extensive mining operations for phosphates might be needed, and we have not yet approached any real limit. Stage 3: up to 15 million million in 450 years' time At first sight, it seems that a very big leap forward could be taken if we use sources of power other than sunlight for photosynthesis. The solar power received at the earth's surface is only about 1 kilowatt per square meter at the equator at midday, and the average value over the day and night sides of the globe is a quarter of this. Over half of it is in the regions of the spectrum of no use for photosynthesis. About one kilowatt-year per square meter could be produced by the complete fission of the uranium and thorium in about 3 cm depth of the Earth's crust or by fusion of the deuterium in about 3 mm depth of seawater, so that adequate power should be available for some time. It is, however, difficult to see how the overall thermal efficiency from fuel to the light actually used for photosynthesis could be even as good as the ratio of useful to non-useful solar radiation (about 40 percent). It would, therefore, be better to use large satellite reflectors in orbit to give extra sunlight to the poles and to the night side of the Earth. A large number of mirrors could be maintained in quasi-stable orbits about 1½ million kilometers outside the Earth's orbit, any deviations being controlled by movable "sails" using the pressure of sunlight. To double our total radiation income would require a total area of about 100 million square kilometers of mirror which, in aluminum a tenth of a micron thick, would weigh about 30 million tons. With plenty of people to design and make the equipment it should not be difficult by the time it would be required, and it would bring the whole Earth to equatorial conditions, melting the polar ice and allowing one further doubling of population. A second doubling of radiation income would give the whole Earth midday equatorial conditions round the clock, which would be exceedingly difficult to cope with without serious overheating. The overall efficiency of local power sources for photosynthesis is likely to be less than that of sunlight, so that no real gain in ultimate population size can be expected from their use, without an even more serious overheating of the entire globe. If, however, the mirrors outside the Earth's orbit were made of selectively reflecting material, reflecting only the most useful part of the spectrum, and if a further satellite filter were used, inside the Earth's orbit, to deflect the useless 60 percent of direct solar radiation, a further gain of a factor of 2½ should easily be possible without creating thermally impossible conditions, at the cost only of perhaps a 10-100 times increase of weight of mirror plus filter -- not difficult for the larger population with an extra 50 years of technical development. We should then have attained a world population of 15 million million about 450 years from now. Stage 4: up to 1,000 million million in 680 years' time A considerably larger gain is in principle obtainable if the essential bulk foods: fats, carbohydrates, amino acids and so on, could be directly synthesized. Biological methods might still be permitted for a few special trace compounds. The direct rate of energy production resulting from the conversion of our food into our waste products is only about 100 watts per person and, if high-temperature energy from nuclear fuel (or sunlight) could be efficiently used, waste products could in principle be changed back into food compounds with the absorption of little more energy. Cadavers could be homogenized and would not, at least for physical reasons, need to be chemically treated at all. The fresh mineral material which would have to be processed to allow for population growth would be much less than 1 percent of the turnover, and its energy requirements can be neglected. If we suppose that the overall efficiency could not be increased beyond 50 percent, a further 100 watts per person would be dissipated as heat in the process of feeding him. We have some hundreds of years to work up the efficiency to this value, so at least this ought to be possible. Some further power would be needed for light, operation of circulation machinery, communications etc., but 50 watts per person should suffice. As we have seen, the long-term average heat income of the Earth's surface is at present about 250 watts per square meter, and this could be doubled without raising the temperature above the normal equatorial value. (The initial rate of rise would be low till the polar ice had gone, which might take 100 years.) We thus have 500 watts per head, could support 1,000 million million people altogether. The population density would he two per square meter, averaged over the entire land and sea surface of the Earth. Stage 4a: up to 12,000 million million in 800 years' time. Dead end Above two people per square meter, severe refrigeration problems occur. If the oceans were used as a heat sink, their mean temperature would have to rise about 1 °C per year to absorb 500 watts per square meter. This would be all right for the doubling time of 37 years, at the end of which we should have four people per square meter. Half another doubling time could be gained if efficient heat pumps (which, for reasons of thermal efficiency, would require primary energy sources of very high temperature) could be used to bring the ocean to the boil. Two more doublings would be permitted if the oceans were converted into steam, though that would create an atmospheric pressure comparable with the mean ocean bottom pressure at present. Since the resulting steam blanket would also be effectively opaque to all radiation, no further heat sink could be organized and this procedure would therefore seem to lead to a dead end. Stage 5: S: up to 60,000 million million in 890 years' time A preferable scheme would be the opposite one of roofing in the ocean to stop evaporation (this would, in any case, probably have been done long before, for housing) and hermetically sealing the outer surface of the planet. All of the atmosphere not required for ventilation of the living spaces could then be pumped into compression tanks, for which no great strength would be needed if they were located on ocean bottoms. Heat pumps could then be used to transfer heat to the solid outer skin, from which, in the absence of air, it would be radiated directly into space. The energy radiated from a black body goes up as T4, where T is the absolute temperature (°K), but for a fixed rate of heat extraction from the living space, at a fixed temperature (say, 30°C or 303°K), the heat-power radiated must for thermodynamic reasons be proportional to T even if the refrigeration equipment is perfectly efficient (see any good textbook on the principles of refrigeration). Hence the rate of heat extraction will go up no faster than T3 where T is the outer surface temperature. All the same, this gives more promising results than would the use of the ocean as a temporary heat sink. An outer skin temperature of 300°C would give a heat extraction of 3 kW per square meter and 1,000°C would give an extraction ten times greater. If heat removal were the sole limitation, then we could manage about 120 persons per square meter for an outer skin temperature of 1,000°C which represents nearly six further doublings of population after the end of Stage 4, with a world population of 60,000 million million in 890 years' time. 1,000°C may be a rather modest figure for the technology of A.D. 2854 and the population could, as far as heat is concerned, be able to double again for each rise of absolute skin temperature of 21/3 or 26 percent. The difficulties in raising it much further while keeping all thermodynamic efficiencies high would, however, seem to be formidable. A rise to 2,000°C would give us less than three further doublings. We seem, therefore, to have found one possible absolute limit to human population, due to the heat problem, which at the present rate would be reached 800-1,000 years from now, with a world population of between 1016 and 1018. I have not considered emigration to other planets because it seems to me unlikely that our technical capacity to do so will catch up with the population expansion. To keep world-population level we would have to be sending out 60 million people per annum now. It is so much cheaper to feed them here that this will not be done. If, however, it were possible to export population on the scale required it would not make a great difference. Venus is much the same size as the Earth, so (assuming that it has all the raw materials needed) an extra 37 years would bring it to the same population density as the Earth. Mercury, Mars and the Moon together give half the same area, so that Venus and the Earth together would take them up to the same population density in a further 10 years. The moons of Jupiter and Saturn could give us another 2 years or so. It is not clear that normal human beings could live on Jupiter and Saturn themselves and impound their extensive atmospheres, and the outer planets would take a long time to reach; if all these extraordinary problems could be solved, nearly 200 years might be gained. Other possible limitations than heat will doubtless have occurred to readers, but these do not seem to be absolute. The most obvious is perhaps the housing problem for 120 persons per square meter. We can safely assume, however, that in 900 years' time the construction of continuous 2000-story buildings over land and sea alike should be quite easy. That would give 7½ square meters of floor space for each person in 1,000 stories (though wiring, piping, ducting and lifts would take up to half of that) and leave the other 1,000 stories for the food-producing and refrigerating machinery. It is clear that, even at much lower population densities, very little horizontal circulation of persons, heat or supplies could be tolerated and each area of a few kilometers square, with a population about equal to the present world population, would have to be nearly self-sufficient. Food would all be piped in liquid form and, of course, clothes would be unnecessary. Raw materials should not be a problem. The whole of the oceans and at least the top 10 kilometers of the Earth's crust would be available, giving a wide choice of building, plumbing and machine-building materials. Even with 8 tons of people per square meter (reckoning 15 people to the ton) all the necessary elements of life could be obtained; some from air and sea (C, H, O, N, Na, Cl, Ca, K and some trace elements) and some from the top 100 meters of solid crust (Fe, S, P, I and remaining trace elements). Only after a further hundredfold increase in population would it be needful to go below the top 10 km of crust for some elements (N, S, P, I). Such an increase would need an outer skin temperature of 5,000° C (comparable with the surface of the Sun) to radiate away the body heat, which would seem to be well beyond the possible limits.

#### Civilization doesn't cause war

Taylor in ‘2

(Steve, Teaches Personal Development @ U. Manchester, Journal of Consciousness Studies, “Where Did It All Go Wrong? James DeMeo's Saharasia Thesis and the Origins of War”, 9:8, Ingenta)

In other words, archaeological evidence shows that, far from being ‘as old as history’ and common throughout our species, war emerged amongst certain human groups at a particular time and a particular place. Obviously, neither the physicalist nor the sociobiological theories can account for this. Perhaps one could suggest that the Indo-Europeans, the Semites and other war-like peoples had higher levels of testosterone (or lower levels of serotonin) than the human beings who came before them, or that their genes were even more ‘selfish’ than usual, but both of these options seem very unlikely. Scholars who accept that war is a relatively late historical development have suggested social and environmental causes. Some historians have suggested that war was linked to the beginnings of civilization. This makes some sense, since both arose at roughly the same time (the ancient civilizations of Egypt and Sumer emerged during the fourth millennium BCE), but the problem here is that peoples such as the early Indo-Europeans and Semites did not have any kind of civilization— or even lead a ‘settled’ lifestyle—and yet were extremely war-like. And even more significantly, there were many earlier peoples who were clearly ‘civilized’, with a reasonably high level of technological development and large living communities (such as the ancient Cretans or the citizens of Catal Huyuk), who were extremely peaceful. Similarly, some scholars have suggested that the eruption of war was linked to a growth of population and a resultant scarcity of new land for horticulture. But according to R. Bryan Ferguson (2000), ‘the data just does not support a direct association of increasing density and increasing war.’ Others have suggested that the beginnings of war were related to the decline of hunting, that as the opportunity to hunt faded with the horticultural way of life, men began to wage war as a kind of substitute, an alternative way of exercising their bravery and skill. But again, the fact that human groups lived a peaceful, sedentary life for as long as three thousand years following the transition to horticulture invalidates this view.

#### Environmental destruction is not a product of civilization or western culture ---- pre-civilization cultures were incredibly environmentally destructive

Penn in ‘3

(Dustin, Dir. And Senior Scientist @ Konrad Lorenz Institute of Comparative Ethology and former Visiting Prof. Zoology @ U. Vienna, Quarterly Review of Biology, “The Evolutionary Roots of our Environmental Problems: Toward a Darwinian Ecology”, 78:3, September, EBSCO)

We have never quite outgrown the idea that, somewhere, there are people living in perfect harmony with nature and one another, and that we might do the same were it not for the corrupting influences of Western culture (Konner 1990). When attempting to explain why humans are ecologically destructive, environmental scholars have long attributed the problem to “Western” culture, especially the anthropocentric and scientific worldviews (White 1967). Subsequently, many argue that addressing our ecological problems requires a rejection of the materialism of science, and an embrace of the animistic and spiritual beliefs of non-Western religions and traditional cultures. Aboriginal peoples, such as Native American Indians, have been represented as the major role model for the modern environmental movement because they are widely thought to have lived in harmony with nature before Western contact. Environmentalists often quote a famous speech by Chief Seattle of the Susquamish tribe who reportedly stated that “Every part of this earth is sacred to my people . . . the earth does not belong to man, man belongs to the earth” (Gore 1992:259). Just as Jean-Jacques Rousseau thought that people in traditional cultures live as “noble savages,” environmentalists often assume that humans lived in harmony with nature as “ecological noble savages” until they became corrupted by Western culture (Redford 1991). The idea that our modern environmental problems are due to Western science and culture is central to modern environmental movements and philosophies such as Deep Ecology (Devall and Sessions 1985; Sessions 1995) and ecofeminism (Merchant 1980). Evolutionary researchers have been uncovering a very different picture of the conservation behavior in traditional and other non- Western cultures (Smith and Wishnie 2000). Increasing evidence indicates that pre- Columbian American Indians and other traditional societies are not the conservationists often assumed (Edgerton 1992; Ridley 1996; Krech 1999). The low ecological impact of people in traditional cultures does not appear to be due to conservation practices per se, but simply their low population densities and inefficient technologies (Hames 1987; Alvard 1993, 1995; Kay 1994; Stearman 1994; Vickers 1994; Low 1996a; Alvard 1998; Miller et al. 1999; Ruttan and Borgerhoff Mulder 1999). Among the Piro Indians in Ecuador, hunters do not pay the opportunity costs of passing up prey for conservation; instead their hunting behavior follows optimal foraging principles (Alvard 1993, 1995, 1999). Nor is there is any association between societies that hold beliefs about the sacredness of nature and having a low ecological impact (Low 1996a). It turns out that the widely quoted speech by Chief Seattle is just a myth, a story created for television, that has been perpetuated by uncritical and wishfulthinking environmentalists (Ridley 1996). Furthermore, increasing evidence indicates that our species has a long history of causing ecological destruction (Diamond 1988, 1992, 1995; Redman 1999). As humans have moved around the planet, they have caused massive extinctions in various ecosystems. For example, the megafaunal extinction in the Americas during the Pleistocene (in which 57 species of large mammals went extinct, including mammoths and mastodons, in a sudden ecological collapse) is usually attributed to climate change. Alfred Russell Wallace suggested otherwise: “I am convinced that the rapidity of . . . the extinction of so many large Mammalia is actually due to man’s agency” (cited in Leakey and Lewin 1995:172). Much evidence now indicates that the Pleistocene extinctions in North America correspond to the time of arrival of human migrations from Asia (Martin 1978; Martin and Klein 1984). This major extinction event does not appear to have been due to climate change; other places experienced climate change at this time, but did not have similar extinctions. Instead, it appears that it was due to the vulnerability of North American fauna to a newly introduced and highly effective predator, Homo sapiens (Alroy 2001). This “Pleistocene overkill” hypothesis is somewhat controversial; it is still debated whether the Pleistocene extinctions in North American were due to human hunting alone, climate change, or some combination of these factors. Yet, the major extinctions that occurred on many South Pacific islands (Steadman and Olson 1985; Steadman et al. 2002), such as the disappearance of elephant birds in New Zealand, cannot be attributed to climate change and they coincide precisely with the arrival of humans who hunted them extensively (Anderson 1989; Diamond 2000; Holdaway and Jacomb 2000; Roberts et al. 2001). Once humans began to settle down and organize into larger and more complex societies, entire civilizations appear to have collapsed due to the overexploitation of their resource base (Diamond 1988; Ponting 1992). After arriving to Easter Island, the Polynesians turned a lush forested island into a treeless landscape, exhausted their resources, and their population and society collapsed (Diamond 1995). The sudden disappearance of the Anasazi Indians in North America, the Maya in Central America, and other non-Western civilizations may have been due to an ecological collapse (Culbert 1973; Deevey et al. 1979; Diamond 1992; Redman 1999; Stuart 2000). The precise causes for the demise of the Maya and Anasazi and other ancient civilizations are still unclear and controversial. Their downfall is still usually attributed to internal social turmoil or hostile invading groups (except Easter Island), though such events may have just provided the final coup de grace after resource depletion already undermined economic and political stability, as we are seeing today in many societies (Homer-Dixon 1999). Thus, humans did not live in harmony with nature until the spread of “Western” culture, and these findings about our species’ actual conservation behavior offer several extremely important implications. First, they indicate that environmentalists are not merely overreacting “alarmists”; we have very good reasons to be concerned about our species’ potential for causing ecological destruction. Second, they indicate that achieving ecological sustainability may be more difficult than is often assumed and that we cannot simply abandon “Western” secularism and science for mysticism. Third, they show that we must be wary of romantic myths and wishful thinking about human nature. Becoming more critical, though, does not imply that we should not be open to new possibilities or try to learn from other cultures. Many societies have successfully managed their resources (Smith and Wishnie 2000), so there is room for optimism. What is needed is more research into how people in various societies have successfully managed their natural resources, and to determine how to apply this knowledge toward designing adaptive strategies for dealing with ecological problems (e.g., Ostrom et al. 1999).

#### Technological growth is vital to increasing the carrying capacity ---- abandoning civilization would create worse forms of overshoot

Goklany and Trewavas in ‘3

(Indur, US Dept. Interior, and Anthony, Prof. @ Institute of Cell and Molecular Biology @ U. Edinburgh, Nature, “How technology can reduce our impact on the Earth Prudent use of innovations could avoid sacrificing the present for the future, or vice versa”, 423, http://members.cox.net/igoklany/Goklany%20&%20Trewavas%202003.pdf)

William E. Rees, in his Concepts essay “A blot on the land” (Nature 421, 898; 2003), uses the ecological-footprint concept to argue that the ‘carrying capacity’ of the Earth has been exceeded because of technological and economic growth, and to counter some some economists’ claims that the carrying capacity can increase indefinitely. The critical point, unrecognized by either side, is not whether the carrying capacity can increase indefinitely but whether it can increase rapidly enough to accommodate the environmental and economic expectations of a world that grows wealthier as its population growth rate slows dramatically. Paradoxically, both technology and economic development provide the means to solve the very problems they create. Without technological development in the first instance, the human population would be smaller, because higher birth rates would have been offset by higher mortality rates. Dispensing with present technology now would undoubtedly be catastrophic in human terms — people would be hungrier, unhealthier and shorter-lived , without the world necessarily becoming ecologically more stable. Similarly, foregoing economic development, which helps to generate wealth, would also be calamitous (see I. M. Goklany, Case Western Law Review; in the press). Only wealthy countries can afford the scientific infrastructure to research, develop and put into use clean technologies that increase the Earth’s carrying capacity. For all of these reasons, the richest countries, not surprisingly, are also the most technologically advanced. They have the highest crop yields per hectare, which is inversely related to the demand for land, a primary element in the ecological footprint. Inefficient agriculture creates pressures for new agricultural land at the expense of virgin forest or marginal lands in countries with growing populations. If agricultural-technology development had been frozen in 1961, we estimate, using data from the Food and Agriculture Organisation (see FAOSTAT 2003: apps.fao.org), that cropland would have had to increase from its present 11% to some 25% of the planetary surface to produce the same amount of food now. Accepting Rees’s estimate that we currently exceed the Earth’s carrying capacity by one-fifth, without technological development we would now exceed it by one-third. Virtually no natural forest would now remain and the rest of nature would be even more embattled. Yes, we recognize that current agricultural technology, with its reliance on pesticides and fertilizers, created many new problems even as it solved old ones, but that is exactly why we favour technological change. New technologies need not be perfect, but they should improve on current versions. That is why we support prudent use of agricultural biotechnology — another imperfect technology, but vastly superior to conventional technologies. The trick is not to sacrifice the present for the future, or vice versa. Without technological change and economic development, there can be no solution to the predicament of meeting human needs while containing human impact on the planet. Although neither technological change nor economic development is a panacea, they make a solution more likely.

## 1ar

### Nuclear War

#### New sources and models all forecast extinction—none of their indicts apply

**Mosher 2011** (2/25, Dave, Wired Science, “How one nuclear skirmish could wreck the planet”, <http://www.wired.com/wiredscience/2011/02/nuclear-war-climate-change/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed:+wiredscience+(Blog+-+Wired+Science)>, WEA)

WASHINGTON — Even a small nuclear exchange could ignite mega-firestorms and wreck the planet’s atmosphere.

New climatological simulations show 100 Hiroshima-sized nuclear bombs — relatively small warheads, compared to the arsenals military superpowers stow today — detonated by neighboring countries would destroy more than a quarter of the Earth’s ozone layer in about two years.

Regions closer to the poles would see even more precipitous drops in the protective gas, which absorbs harmful ultraviolet radiation from the sun. New York and Sydney, for example, would see declines rivaling the perpetual hole in the ozone layer above Antarctica. And it may take more than six years for the ozone layer to reach half of its former levels.

Researchers described the results during a panel Feb. 18 at the [annual meeting of the American Association for the Advancement of Science](http://www.aaas.org/meetings/2011/), calling it “a real bummer” that such a localized nuclear war could bring the modern world to its knees.

“This is tremendously dangerous,” said environmental scientist [Alan Robock of Rutgers University](http://envsci.rutgers.edu/~robock/), one of the climate scientists presenting at the meeting. “The climate change would be unprecedented in human history, and you can imagine the world … would just shut down.”

To defuse the complexity involved in a nuclear climate catastrophe, Wired.com sat down with [Michael Mills](http://acd.ucar.edu/~mmills/), an atmospheric chemist at the National Center for Atmospheric Research, who led some of the latest simulation efforts.

‘It’s pretty clear this would lead to a global nuclear famine.’

Wired.com: In your simulation, a war between India and Pakistan breaks out. Each country launches 50 nukes at their opponent’s cities. What happens after the first bomb goes off?

Michael Mills: The initial explosions ignite fires in the cities, and those fires would build up for hours. What you eventually get is a firestorm, something on the level we saw in World War II in cities like Dresden, in Tokyo, Hiroshima and so on.

Today we have larger cities than we did then — mega cities. And using 100 weapons on these different mega cities, like those in India and Pakistan, would cause these firestorms to build on themselves. They would create their own weather and start sucking air through bottom. People and objects would be sucked into buildings from the winds, basically burning everything in the city. It’ll burn concrete, the temperatures get so hot. It converts mega cities into black carbon smoke.

Wired.com: I see — the firestorms push up the air, and ash, into the atmosphere?

Mills: Yeah. You sometimes see these firestorms in large forest fires in Canada, in Siberia. In those cases, you see a lot of this black carbon getting into the stratosphere, but not on the level we’re talking about in a nuclear exchange.

The primary cause of ozone loss is the heating of the stratosphere by that smoke. Temperatures initially increase by more than 100 degrees Celsius, and remain more than 30 degrees higher than normal for more than 3 years. The higher temperatures increase the rates of two reaction cycles that deplete ozone.

Wired.com: And the ozone layer is in the stratosphere, correct?

Mills: OK, so we live in the troposphere, which is about 8 kilometers [5 miles] thick at the poles, and 16 km [10 miles] at the equator.

At the top of the troposphere, you start to encounter the stratosphere. It’s defined by the presence of the ozone layer, with the densest ozone at the lowest part, then it tails off at the stratopause, where the stratosphere ends about 50 km [30 miles] up.

We have a lot of weather in the troposphere. That’s because energy is being absorbed at the Earth’s surface, so it’s warmest at the surface. As you go up in the atmosphere it gets colder. Well, that all turns around as you get to the ozone layer. It starts getting hotter because ozone is absorbing ultraviolet radiation, until you run out of ozone and it starts getting colder again. Then you’re at the mesosphere.

How Nukes Gobble Up Ozone

When we talk about ozone, we’re talking about the odd oxygen family, which includes both ozone (O3) and atomic oxygen (O). Those two gases can interchange rapidly within hours.

Ozone is produced naturally by the breakdown of molecules of oxygen, O2, which makes up 20 percent of the atmosphere. O2 breaks down from ultraviolet solar radiation and splits it into two molecules of O. Then the O, very quickly, runs into another O2 and forms O3. And the way O3 forms O again is by absorbing more UV light, so it’s actually more protective than O2.

Ozone is always being created and destroyed by many reactions. Some of those are catalytic cycles that destroy ozone, and in those you have something like NO2 plus O to produce NO plus O2. In that case, you’ve gotten rid of a member of the odd oxygen family and converted it to O2. Well, then you’ve got an NO which can react with ozone and produce the NO2 back again and another O2. So the NO and NO2 can go back and forth and in the process one molecule can deplete thousands of molecules of ozone.

It’s a similar process to chlorofluorocarbons, Those are the larger molecules that we’ve manufactured that don’t exist naturally. They break down into chlorine in the stratosphere, which has a powerful ozone-depleting ability. —Michael Mills

Wired.com: Where do the nukes come in? I mean, in eroding the ozone layer?

Mills: It’s not the explosions that do it, but the firestorms. Those push up gases that lead to oxides of nitrogen, which act like[chlorofluorocarbons](http://www.wired.com/wiredscience/2010/12/siberian-traps/). But let’s back up a little.

There are two important elements that destroy ozone, or O3, which is made of three atoms of oxygen. One element involves oxides of nitrogen, including nitrogen dioxide, or NO2, which can be made from nitrous oxide, or N2O — laughing gas.

The other element is a self-destructive process that happens when ozone reacts with atomic oxygen, called O. When they react together, they form O2, which is the most common form of oxygen on the planet. This self-reaction is natural, but takes off the fastest in the first year after the nuclear war.

In years two, three and four, the NO2 builds up. It peaks in year two because the N2O, the stuff that’s abundant in the troposphere, rose so rapidly with the smoke that it’s pushed up into the stratosphere. There, it breaks down into the oxides like NO2, which deplete ozone.

Wired.com: So firestorms suck up the N2O, push it up into the stratosphere, and degrade the ozone layer. But where does this stuff come from?

Mills: N2O is among a wide class of what we call tracers that are emitted at the ground. It’s produced by bacterias in soil, and it’s been increasing due to human activities like nitrogen fertilizers used in farming. N2O is actually now the most significant human [impact on the ozone](http://www.wired.com/wiredscience/2008/05/reactive-nitrog/), now that we’ve mostly taken care of CFCs.

Wired.com: You did [similar computer simulations](http://www.wired.com/wiredscience/2008/04/regional-nuclea/) in the past few years and saw this [ozone-depleting effect](http://www.pnas.org/content/105/14/5307.abstract). What do the new simulations tell us?

Mills: Before, we couldn’t look at the ozone depletion’s effects on surface temperatures; we lacked a full ocean model that would respond realistically. The latest runs are ones I’ve done in the Community Earth System Model. It has an atmospheric model, a full-ocean model, full-land and sea-ice models, and even a glacier model.

We see significantly greater cooling than other studies, perhaps because of ozone loss . Instead of a globally averaged 1.3-degree–Celsius drop, which [Robock’s atmospheric mode](http://onlinelibrary.wiley.com/doi/10.1002/wcc.45/abstract)l produced, it’s more like 2 degrees. But we both see a 7 percent decrease in global average precipitation in both models. And in our model we see a much greater global average loss of ozone for many years, with even larger losses everywhere outside of the tropics.

I also gave this to my colleague [Julia Lee-Taylor](http://acd.ucar.edu/~julial/) at NCAR. She calculated the UV indexes across the planet, and a lot of major cities and farming areas would be exposed to a UV index similar to the Himalayas, or the hole over the Antarctic. We’re starting to look at the response of sea ice and land ice in the model, and it seems to be heavily increasing in just a few years after the hypothetical war.

Wired.com: What would all of this do to the planet, to civilization?

Mills: UV has big impacts on whole ecosystems. Plant height reduction, decreased shoot mass, reduction in foliage area. It can affect genetic stability of plants, increase susceptibility to attacks by insects and pathogens, and so on. It changes the whole competitive balance of plants and nutrients, and it can affect processes from which plants get their nitrogen.

Then there’s marine life, which depends heavily on [phytoplankton](http://www.wired.com/wiredscience/2010/08/phytoplankton-blooms-gallery/). Phytoplankton are essential; they live in top layer of the ocean and they’re the plants of the ocean. They can go a little lower in the ocean if there’s UV, but then they can’t get as much sunlight and produce as much energy. As soon as you cut off plants in the ocean, the animals would die pretty quickly. You also get damage to larval development and reproduction in fish, shrimp, crabs and other animals. Amphibians are also very susceptible to UV.

### Util

#### Prefer util

Cummiskey 90 – Professor of Philosophy, Bates (David, Kantian Consequentialism, Ethics 100.3, p 601-2, p 606, jstor, AG)

We must not obscure the issue by characterizing this type of case as the sacrifice of individuals for some abstract "social entity." It is not a question of some persons having to bear the cost for some elusive "overall social good." Instead, the question is whether some persons must bear the inescapable cost for the sake of other persons. Nozick, for example, argues that "to use a person in this way does not sufficiently respect and take account of the fact that he is a separate person, that his is the only life he has."30 Why, however, is this not equally true of all those that we do not save through our failure to act? By emphasizing solely the one who must bear the cost if we act, one fails to sufficiently respect and take account of the many other separate persons, each with only one life, who will bear the cost of our inaction. In such a situation, what would a conscientious Kantian agent, an agent motivated by the unconditional value of rational beings, choose? We have a duty to promote the conditions necessary for the existence of rational beings, but both choosing to act and choosing not to act will cost the life of a rational being. Since the basis of Kant's principle is "rational nature exists as an end-in-itself' (GMM, p. 429), the reasonable solution to such a dilemma involves promoting, insofar as one can, the conditions necessary for rational beings. If I sacrifice some for the sake of other rational beings, I do not use them arbitrarily and I do not deny the unconditional value of rational beings. **Persons** may **have "dignity**, an unconditional and incomparable value" that transcends any market value (GMM, p. 436), **but**, as rational beings, persons **also** have **a fundamental equality which dictates that some must** sometimes **give way for the sake of others.** The formula of the end-in-itself thus does not support the view that we may never force another to bear some cost in order to benefit others. If one focuses on the equal value of all rational beings, then equal consideration dictates that one sacrifice some to save many. [continues] According to Kant, the objective end of moral action is the existence of rational beings. Respect for rational beings requires that, in deciding what to do, one give appropriate practical consideration to the unconditional value of rational beings and to the conditional value of happiness. Since agent-centered constraints require a non-value-based rationale, the most natural interpretation of the demand that one give equal respect to all rational beings lead to a consequentialist normative theory. We have seen that there is no sound Kantian reason for abandoning this natural consequentialist interpretation. In particular, a consequentialist interpretation does not require sacrifices which a Kantian ought to consider unreasonable, and it does not involve doing evil so that good may come of it. It simply requires an uncompromising commitment to the equal value and equal claims of all rational beings and a recognition that, in the moral consideration of conduct, one's own subjective concerns do not have overriding importance.

### Transition

#### Collapse of society into anarchy causes extinction

Rubin ‘8

(Dani, Earth Editor for PEJ News, “Beyond Post-Apocalyptic Eco-Anarchism”, <http://www.pej.org/html/modules.php?op=modload&name=News&file=article&sid=7133&mode=thread&order=0&thold=0>)

Unlike twenty-five years ago, increasingly, people are adopting the anarcho-apocalyptic, civilization-must-fall-to-save-the-world attitude. It is a fairly clean and tight worldview, zealously bulletproof, and it scares me. I want the natural world, the greater community of life beyond our species, with all its beautiful and terrifying manifestations, and its vibrant landscapes to survive intact – I think about this a lot. A quick collapse of global civilization, **will almost certainly lead to greater explosive damage** to the biosphere, than a mediated slower meltdown. When one envisions the collapse of global society, one is not discussing the demise of an ancient Greek city-state, or even the abandonment of an empire like the Mayans. The end of our global civilization would not only result in the **death of six billion humans**, just wiping nature’s slate clean. We also have something like **5,000 nuclear facilities** spread across the planet’s surface. And this is just one obvious and straightforward fact cutting across new radical arguments in favor of a quick fall. We have inserted ourselves into the web of life on planet Earth, into its interstitial fibers, over the last 500 years. We are now a big part of the world’s dynamic biological equation set – its checks and balances. If we get a “fever” and fall into social chaos, even just considering our non-nuclear toys laying about, the damage will be profound. It will be much more devastating than our new visionaries of post-apocalyptic paradise have prophesized. If one expands upon current examples of social chaos that we already see, like Afghanistan or Darfur, extrapolating them across the globe, encompassing Europe, Asia, North and South America, and elsewhere, then one can easily imagine desperate outcomes where nature is sacrificed wholesale in vain attempts to rescue human life. The outcomes would be beyond “ugly”; they would be horrific and enduring. That is why I cannot accept this new wave of puritanical anarcho-apocalyptic theology. **The end-point of a quick collapse is quite likely to resemble the landscape of Mars**, or even perhaps the Moon. I love life. I do not want the Earth turned barren. I think that those who are dreaming of a world returned to its wilderness state are lovely, naive romantics – dangerous ones. Imagine 100 Chernobyl’s spewing indelible death. Imagine a landscape over-run with **desperate and starving humans**, wiping out one ecosystem after another. Imagine **endless tribal wars** where there are **no restraints** on the use of **chemical and biological weapons.** Imagine a failing industrial infrastructure seeping massive quantities of deadly toxins into the air, water and soil. This is not a picture of primitive liberation, of happy post-civilized life working the organic farm on Salt Spring Island.

### Alt

#### Civilization creates path dependence ---- we can’t change the course

Tech makes growth inevitable- only accelerating and harnessing the forces of economic growth can mitigate its potential harms

Aligica 2003

(Paul Aligica, Fellow at the Mercatus Center at George Mason University and Adjunct Fellow at the Hudson Institute, “The Great Transition and the Social Limits to Growth: Herman Kahn on Social Change and Global Economic Development”, April 21, http://www.hudson.org/index.cfm?fuseaction=publication\_details&id=2827)

Kahn pointed to yet another deep structural factor working against the limits to growth movement: the technological revolution. For him civilization has made a "Faustian bargain": a historical commitment to science, technology and industry. Science and technology helped Western civilization remove poverty, illiteracy, hunger and short life spans for the majority of people and created for them instead relative affluence, longer life expectancy and a sense of increasing power. But once the technological revolution started stopping its course is almost impossible: "Mankind is involved in a process that probably cannot voluntarily and safely be stopped, or prematurely slowed down significantly, even if there are good arguments for doing so." He maintained that "on balance and with some exceptions (for example, nuclear proliferation), the arguments are heavily against deliberate policies to halt or slow down the basic long-term technological trend, even if it could be done with safety. Indeed, we would prefer to accelerate some aspects of this trend, while being prudent and generally watchful in order to prevent or reduce the impact of the baneful possibilities" (Kahn, 1976, 164). Therefore it is probably a waste of time to think ideologically about stopping progress (much less social change) and foolish to regret that much of the physical environment and many established institutions must change. Much may be protected or preserved, and many aesthetic, environmental, and conservationist values may be furthered and enhanced. Nonetheless, some basic and irrevocable changes will occur (Kahn, 1979, 24).

#### Their K will get owned by the biggest PR campaign in history

Heinberg ‘4

(Richard, Member of Core Faculty @ New College of California, “Power Down: Options and Actions for a Post-Carbon World”, p. 178-179)

The world must do both — reduce human population and reduce per-capita resource consumption in the industrialized regions — if society is to power down rather than collapse in chaos. The Earth cannot afford rich people, nor can it continuously support six billion humans and counting at any standard of living. But this news pleases no one. If the Movement were to truly embrace it, the elites would pounce, and it would be the easiest PR takedown in history. A few well-paid public relations firms would place some ads and op-ed pieces, and an "authoritative" study or two would be issued saying, in effect, "Nonsense! There is plenty for everyone; technology and the market will fix everything." Broadcast commentators would pile on, polls would be taken, and the foolish notion that humans actually face ecological constraints, just as all other organisms do, would be thoroughly discredited and banished from serious conversation. Imagine how the talk show hosts would rant: "Reduce our standard of living? Now `they' are trying to take away your car!" — a car that will cease to run anyway when oil becomes prohibitively expensive. "Reduce population? Why that sounds like genocide!" — which, ironically, is exactly what the elites themselves are preparing for through their investments in nuclear bombs and genetic bio-weapons. And so the critical message is muted and truncated. The Movement tailors its utterances for maximum public-relations effectiveness, just as the elites do. Politics trumps truth.

### A2 radiation

#### Zero health risk from radiation.

Colvin, ‘00

[Joe F, President and CEO -- NEI, 7-18, “speech for the U.S. House of Representatives Committee on Science Subcommittee on Energy & Environment,” http://nei.org/newsandevents/speechesandtestimony/2000/colvintestimony7182000extended]

Potential Health Risks of Exposure to Low Levels of Radiation Are Very Small, Possibly Zero To ensure radiation safety standards are set conservatively, national and international scientific organizations, including the NAS, NCRP, ICRP, IAEA and UNSCEAR, assume a linear relationship between radiation dose and its effect. This means that small doses are assumed to have health effects in direct proportion to the known effects of large doses—even though no health effects have been directly observed at low doses. Many scientists question the validity of the linear hypothesis because of the lack of evidence and the knowledge that many other agents that are harmful at high doses have no effect at low doses. For example, the BEIR V committee of the NAS specifically pointed out that a threshold might exist below which radiation causes no harm. Although numerous scientific studies have been conducted of populations exposed to radiation, there is no consistent evidence that humans are harmed by exposure to radiation at levels below 10,000 millirem. For example, the National Cancer Institute (NCI) of the National Institutes of Health in 1990 announced that a large-scale NCI study found no increased incidence of cancer mortality for people living near 62 nuclear facilities in the United States. This research, which evaluated mortality from 16 types of cancer, showed no increase in the incidence. This study was the largest of its kind ever conducted.

# Round 4 – Neg v Vermont MB

## 1nc

### 1nc framework

#### The resolution indicates affs should advocate topical government change

**Ericson 3** (Jon M., Dean Emeritus of the College of Liberal Arts – California Polytechnic U., et al., The Debater’s Guide, Third Edition, p. 4)

The Proposition of Policy: Urging Future Action In policy propositions, each topic contains certain key elements, although they have slightly different functions from comparable elements of value-oriented propositions. 1. An agent doing the acting ---“The United States” in “The United States should adopt a policy of free trade.” Like the object of evaluation in a proposition of value, the agent is the subject of the sentence. 2. The verb should—the first part of a verb phrase that urges action. 3. An action verb to follow should in the should-verb combination. For example, should adopt here means to put a program or policy into action though governmental means. 4. A specification of directions or a limitation of the action desired. The phrase free trade, for example, gives direction and limits to the topic, which would, for example, eliminate consideration of increasing tariffs, discussing diplomatic recognition, or discussing interstate commerce. Propositions of policy deal with future action. Nothing has yet occurred. The entire debate is about whether something ought to occur. What you agree to do, then, when you accept the affirmative side in such a debate is to offer sufficient and compelling reasons for an audience to perform the future action that you propose.

#### Specific, limited resolutions ensure mutual ground which is key to sustainable controversy without sacrificing creativity or openness

**Steinberg & Freeley 8** \*Austin J. Freeley is a Boston based attorney who focuses on criminal, personal injury and civil rights law, AND \*\*David L. Steinberg , Lecturer of Communication Studies @ U Miami, Argumentation and Debate: Critical Thinking for Reasoned Decision Making pp45-

Debate is a means of settling differences, so there must be a difference of opinion or a conflict of interest before there can be a debate. If everyone is in agreement on a tact or value or policy, there is no need for debate: the matter can be settled by unanimous consent. Thus, for example, it would be pointless to attempt to debate "Resolved: That two plus two equals four," because there is simply no controversy about this statement. (Controversy is an essential prerequisite of debate. Where there is no clash of ideas, proposals, interests, or expressed positions on issues, there is no debate. In addition, debate cannot produce effective decisions without clear identification of a question or questions to be answered. For example, general argument may occur about the broad topic of illegal immigration. How many illegal immigrants are in the United States? What is the impact of illegal immigration and immigrants on our economy? What is their impact on our communities? Do they commit crimes? Do they take jobs from American workers? Do they pay taxes? Do they require social services? Is it a problem that some do not speak English? Is it the responsibility of employers to discourage illegal immigration by not hiring undocumented workers? Should they have the opportunity- to gain citizenship? Docs illegal immigration pose a security threat to our country? Do illegal immigrants do work that American workers are unwilling to do? Are their rights as workers and as human beings at risk due to their status? Are they abused by employers, law enforcement, housing, and businesses? I low are their families impacted by their status? What is the moral and philosophical obligation of a nation state to maintain its borders? Should we build a wall on the Mexican border, establish a national identification can!, or enforce existing laws against employers? Should we invite immigrants to become U.S. citizens? Surely you can think of many more concerns to be addressed by a conversation about the topic area of illegal immigration. Participation in this "debate" is likely to be emotional and intense. However, it is not likely to be productive or useful without focus on a particular question and identification of a line demarcating sides in the controversy. To be discussed and resolved effectively, controversies must be stated clearly. Vague understanding results in unfocused deliberation and poor decisions, frustration, and emotional distress, as evidenced by the failure of the United States Congress to make progress on the immigration debate during the summer of 2007.

Someone disturbed by the problem of the growing underclass of poorly educated, socially disenfranchised youths might observe, "Public schools are doing a terrible job! They are overcrowded, and many teachers are poorly qualified in their subject areas. Even the best teachers can do little more than struggle to maintain order in their classrooms." That same concerned citizen, facing a complex range of issues, might arrive at an unhelpful decision, such as "We ought to do something about this" or. worse. "It's too complicated a problem to deal with." Groups of concerned citizens worried about the state of public education could join together to express their frustrations, anger, disillusionment, and emotions regarding the schools, but without a focus for their discussions, they could easily agree about the sorry state of education without finding points of clarity or potential solutions. A gripe session would follow. But if a precise question is posed—such as "What can be done to improve public education?"—then a more profitable area of discussion is opened up simply by placing a focus on the search for a concrete solution step. One or more judgments can be phrased in the form of debate propositions, motions for parliamentary debate, or bills for legislative assemblies. The statements "Resolved: That the federal government should implement a program of charter schools in at-risk communities" and "Resolved: That the state of Florida should adopt a school voucher program" more clearly identify specific ways of dealing with educational problems in a manageable form, suitable for debate. They provide specific policies to be investigated and aid discussants in identifying points of difference.

To have a productive debate, which facilitates effective decision making by directing and placing limits on the decision to be made, the basis for argument should be clearly defined. If we merely talk about "homelessness" or "abortion" or "crime'\* or "global warming" we are likely to have an interesting discussion but not to establish profitable basis for argument. For example, the statement "Resolved: That the pen is mightier than the sword" is debatable, yet fails to provide much basis for clear argumentation. If we take this statement to mean that the written word is more effective than physical force for some purposes, we can identify a problem area: the comparative effectiveness of writing or physical force for a specific purpose.

Although we now have a general subject, we have not yet stated a problem. It is still too broad, too loosely worded to promote well-organized argument. What sort of writing are we concerned with—poems, novels, government documents, website development, advertising, or what? What does "effectiveness" mean in this context? What kind of physical force is being compared—fists, dueling swords, bazookas, nuclear weapons, or what? A more specific question might be. "Would a mutual defense treaty or a visit by our fleet be more effective in assuring Liurania of our support in a certain crisis?" The basis for argument could be phrased in a debate proposition such as "Resolved: That the United States should enter into a mutual defense treatv with Laurania." Negative advocates might oppose this proposition by arguing that fleet maneuvers would be a better solution. This is not to say that debates should completely avoid creative interpretation of the controversy by advocates, or that good debates cannot occur over competing interpretations of the controversy; in fact, these sorts of debates may be very engaging. The point is that debate is best facilitated by the guidance provided by focus on a particular point of difference, which will be outlined in the following discussion.

#### Deliberation requires a predetermined subject—they over-determine the rez more than us by assuming debates are the ultimate arbiter of its value as opposed to a means to facilitate clash

Adolf G. **Gundersen,** Associate Professor of Political Science, Texas A&M, **2000**

POLITICAL THEORY AND PARTISAN POLITICS, 2000, p. 104-5. (DRGNS/E625)

Indirect political engagement is perhaps the single most important element of the strategy I am recommending here. It is also the most emblematic, as it results from a fusion of confrontation and separation. But what kind of political engagement might conceivably qualify as being both confrontational and separated from actual political decision-making? There is only one type, so far as I can see, and that is deliberation. Political deliberation is by definition a form of engagement with the collectivity of which one is a member. This is all the more true when two or more citizens deliberate together. Yet deliberation is also a form of political action that **precedes the actual** taking and **implementation** of decisions. It is thus simultaneously connected and disconnected, confrontational and separate. It is, in other words, a form of indirect political engagement. This conclusion, namely, that we ought to call upon deliberation to counter partisanship and thus clear the way for deliberation, looks rather circular at first glance. And, semantically at least, it certainly is. Yet this ought not to concern us very much. Politics, after all, is not a matter of avoiding semantic inconveniences, but of doing the right thing and getting desirable results. In political theory, therefore, the real concern is always whether a circular argument translates into a self-defeating prescription. And here that is plainly not the case, for what I am suggesting is that deliberation can diminish partisanship, which will in turn contribute to conditions amenable to continued or extended deliberation. That "deliberation promotes deliberation" is surely a circular claim, but it is just as surely an accurate description of the real world of lived politics, as observers as far back as Thucydides have documented. It may well be that deliberation rests on certain preconditions. I am not arguing that there is no such thing as a deliberative "first cause." Indeed, it seems obvious to me both that deliberators **require something to deliberate about and that** deliberation **presumes certain institutional structures** and shared values. Clearly something must get the deliberative ball rolling and, to keep it rolling, the cultural terrain must be free of deep chasms and sinkholes. Nevertheless, however extensive and demanding deliberation's preconditions might be, we ought not to lose sight of the fact that, once begun, deliberation tends to be self-sustaining. Just as partisanship begets partisanship, deliberation begets deliberation. If that is so, the question of limiting partisanship and stimulating deliberation are to an important extent the same question.

#### Topical fairness requirements are key to effective dialogue—monopolizing strategy and prep makes the discussion one-sided and subverts any meaningful neg role

**Galloway 7** – professor of communications at Samford University (Ryan, “Dinner And Conversation At The Argumentative Table: Reconceptualizing Debate As An Argumentative Dialogue”, Contemporary Argumentation and Debate, Vol. 28 (2007), ebsco)

Debate as a dialogue sets an argumentative table, where all parties receive a relatively fair opportunity to voice their position. Anything that fails to allow participants to have their position articulated denies one side of the argumentative table a fair hearing. The affirmative side is set by the topic and fairness requirements. While affirmative teams have recently resisted affirming the topic, in fact, the topic selection process is rigorous, taking the relative ground of each topic as its central point of departure.¶ Setting the affirmative reciprocally sets the negative. The negative crafts approaches to the topic consistent with affirmative demands. The negative crafts disadvantages, counter-plans, and critical arguments premised on the arguments that the topic allows for the affirmative team. According to fairness norms, each side sits at a relatively balanced argumentative table.¶ When one side takes more than its share, competitive equity suffers. However, it also undermines the respect due to the other involved in the dialogue. When one side excludes the other, it fundamentally denies the personhood of the other participant (Ehninger, 1970, p. 110). A pedagogy of debate as dialogue takes this respect as a fundamental component. A desire to be fair is a fundamental condition of a dialogue that takes the form of a demand for equality of voice. **Far from** being **a banal request for links** to a disadvantage, fairness is a demand for respect, a demand to be heard, a demand that a voice backed by literally months upon **months of preparation**, research, and critical thinking not be silenced.¶ Affirmative cases that suspend basic fairness norms **operate to exclude** particular negative strategies. Unprepared, one side comes to the argumentative table unable to meaningfully participate in a dialogue. They are unable to “understand what ‘went on…’” and are left to the whims of time and power (Farrell, 1985, p. 114). Hugh Duncan furthers this line of reasoning:¶ Opponents not only tolerate but honor and respect each other because in doing so they enhance their own chances of thinking better and reaching sound decisions. Opposition is necessary because it sharpens thought in action. We assume that argument, discussion, and talk, among free an informed people who subordinate decisions of any kind, because it is only through such discussion that we reach agreement which binds us to a common cause…If we are to be equal…relationships among equals must find expression in many formal and informal institutions (Duncan, 1993, p. 196-197).¶ **Debate compensates for the exigencies of the world by offering a framework that maintains equality for the sake of the conversation** (Farrell, 1985, p. 114).¶ For example, an affirmative case on the 2007-2008 college topic might defend neither state nor international action in the Middle East, and yet claim to be germane to the topic in some way. The case essentially denies the arguments that state action is oppressive or that actions in the international arena are philosophically or pragmatically suspect. Instead of allowing for the dialogue to be modified by the interchange of the affirmative case and the negative response, the affirmative subverts any meaningful role to the negative team, preventing them from offering effective “counter-word” and undermining the value of a meaningful exchange of speech acts. **Germaneness and other substitutes for topical action do not accrue the dialogical benefits** of topical advocacy.

#### Game spaces like debate are distinct from other forms of education and public speaking. There has to be a balance of ground or else one side claims the moral high ground and creates a de facto monologue

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Debate games are often based on pre-designed scenarios that include descriptions of issues to be debated, educational goals, game goals, roles, rules, time frames etc. In this way, debate games differ from textbooks and everyday classroom instruction as debate scenarios allow teachers and students to actively imagine, interact and communicate within a domain-specific game space. However, instead of mystifying debate games as a “magic circle” (Huizinga, 1950), I will try to overcome the epistemological dichotomy between “gaming” and “teaching” that tends to dominate discussions of educational games. In short, educational gaming is a form of teaching. As mentioned, education and games represent two different semiotic domains that both embody the three faces of knowledge: assertions, modes of representation and social forms of organisation (Gee, 2003; Barth, 2002; cf. chapter 2). In order to understand the interplay between these different domains and their interrelated knowledge forms, I will draw attention to a central assumption in Bakhtin’s dialogical philosophy. According to Bakhtin, all forms of communication and culture are subject to centripetal and centrifugal forces (Bakhtin, 1981). A centripetal force is the drive to impose one version of the truth, while a centrifugal force involves a range of possible truths and interpretations. This means that any form of expression involves a duality of centripetal and centrifugal forces: “Every concrete utterance of a speaking subject serves as a point where centrifugal as well as centripetal forces are brought to bear” (Bakhtin, 1981: 272). If we take teaching as an example, it is always affected by centripetal and centrifugal forces in the on-going negotiation of “truths” between teachers and students. In the words of Bakhtin: “Truth is not born nor is it to be found inside the head of an individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction” (Bakhtin, 1984a: 110). Similarly, the dialogical space of debate games also embodies centrifugal and centripetal forces. Thus, the election scenario of The Power Game involves centripetal elements that are mainly determined by the rules and outcomes of the game, i.e. the election is based on a limited time frame and a fixed voting procedure. Similarly, the open-ended goals, roles and resources represent centrifugal elements and create virtually endless possibilities for researching, preparing, presenting, debating and evaluating a variety of key political issues. Consequently, the actual process of enacting a game scenario involves a complex negotiation between these centrifugal/centripetal forces that are inextricably linked with the teachers and students’ game activities. In this way, the enactment of The Power Game is a form of teaching that combines different pedagogical practices (i.e. group work, web quests, student presentations) and learning resources (i.e. websites, handouts, spoken language) within the interpretive frame of the election scenario. Obviously, tensions may arise if there is too much divergence between educational goals and game goals. This means that game facilitation requires a balance between focusing too narrowly on the rules or “facts” of a game (centripetal orientation) and a focusing too broadly on the contingent possibilities and interpretations of the game scenario (centrifugal orientation). For Bakhtin, the duality of centripetal/centrifugal forces often manifests itself as a dynamic between “monological” and “dialogical” forms of discourse. Bakhtin illustrates this point with the monological discourse of the Socrates/Plato dialogues in which **the teacher never learns anything new** from the students, despite Socrates’ ideological claims to the contrary (Bakhtin, 1984a). Thus, discourse becomes monologised when “someone who knows and possesses the truth **instructs someone** who is ignorant of it and in error”, where “a thought is either affirmed or repudiated” by the authority of the teacher (Bakhtin, 1984a: 81). In contrast to this, dialogical pedagogy fosters inclusive learning environments that are able to expand upon students’ existing knowledge and collaborative construction of “truths” (Dysthe, 1996). At this point, I should clarify that Bakhtin’s term “dialogic” is both a descriptive term (all utterances are per definition dialogic as they address other utterances as parts of a chain of communication) and a normative term as dialogue is an ideal to be worked for against the forces of “monologism” (Lillis, 2003: 197-8). In this project, I am mainly interested in describing the dialogical space of debate games. At the same time, I agree with Wegerif that “one of the goals of education, perhaps the most important goal, should be dialogue as an end in itself” (Wegerif, 2006: 61).

#### The impact outweighs—deliberative debate models impart skills vital to respond to existential threats

Christian O. **Lundberg 10** Professor of Communications @ University of North Carolina, Chapel Hill, “Tradition of Debate in North Carolina” in Navigating Opportunity: Policy Debate in the 21st Century By Allan D. Louden, p. 311

The second major problem with the critique that identifies a naivety in articulating debate and democracy is that it presumes that the primary pedagogical outcome of debate is speech capacities. But the democratic capacities built by debate are not limited to speech—as indicated earlier, debate builds capacity for critical thinking, analysis of public claims, informed decision making, and better public judgment. If the picture of modem political life that underwrites this critique of debate is a pessimistic view of increasingly labyrinthine and bureaucratic administrative politics, rapid scientific and technological change outpacing the capacities of the citizenry to comprehend them, and ever-expanding insular special-interest- and money-driven politics, it is a puzzling solution, at best, to argue that these conditions warrant giving up on debate. If democracy is open to rearticulation, it is open to rearticulation precisely because as the challenges of modern political life proliferate, the citizenry's capacities can change, which is one of the primary reasons that theorists of democracy such as Ocwey in The Public awl Its Problems place such a high premium on education (Dewey 1988,63, 154). Debate provides an indispensible form of education in the modem articulation of democracy because it builds precisely the skills that allow the citizenry to research and be informed about policy decisions that impact them, to son rhroueh and evaluate the evidence for and relative merits of arguments for and against a policy in an increasingly infonnation-rich environment, and to prioritize their time and political energies toward policies that matter the most to them.

The merits of debate as a tool for building democratic capacity-building take on a special significance in the context of information literacy. John Larkin (2005, HO) argues that one of the primary failings of modern colleges and universities is that they have not changed curriculum to match with the challenges of a new information environment. This is a problem for the course of academic study in our current context, but perhaps more important, argues Larkin, for the future of a citizenry that will need to make evaluative choices against an increasingly complex and multimediatcd information environment (ibid-). Larkin's study tested the benefits of debate participation on information-literacy skills and concluded that in-class debate participants reported significantly higher self-efficacy ratings of their ability to navigate academic search databases and to effectively search and use other Web resources:

To analyze the self-report ratings of the instructional and control group students, we first conducted a multivariate analysis of variance on all of the ratings, looking jointly at the effect of instmction/no instruction and debate topic . . . that it did not matter which topic students had been assigned . . . students in the Instnictional [debate) group were significantly more confident in their ability to access information and less likely to feel that they needed help to do so----These findings clearly indicate greater self-efficacy for online searching among students who participated in (debate).... These results constitute strong support for the effectiveness of the project on students' self-efficacy for online searching in the academic databases. There was an unintended effect, however: After doing ... the project, instructional group students also felt more confident than the other students in their ability to get good information from Yahoo and Google. It may be that the library research experience increased self-efficacy for any searching, not just in academic databases. (Larkin 2005, 144)

Larkin's study substantiates Thomas Worthcn and Gaylcn Pack's (1992, 3) claim that debate in the college classroom plays a critical role in fostering the kind of problem-solving skills demanded by the increasingly rich media and information environment of modernity. Though their essay was written in 1992 on the cusp of the eventual explosion of the Internet as a medium, Worthcn and Pack's framing of the issue was prescient: the primary question facing today's student has changed from how to best research a topic to the crucial question of learning how to best evaluate which arguments to cite and rely upon from an easily accessible and veritable cornucopia of materials.

There are, without a doubt, a number of important criticisms of employing debate as a model for democratic deliberation. But cumulatively, the evidence presented here warrants strong support for expanding debate practice in the classroom as a technology for enhancing democratic deliberative capacities. The unique combination of critical thinking skills, research and information processing skills, oral communication skills, and capacities for listening and thoughtful, open engagement with hotly contested issues argues for debate as a crucial component of a rich and vital democratic life. In-class debate practice both aids students in achieving the best goals of college and university education, and serves as an unmatched practice for creating thoughtful, engaged, open-minded and self-critical students who are open to the possibilities of meaningful political engagement and new articulations of democratic life.

Expanding this practice is crucial, if only because the more we produce citizens that can actively and effectively engage the political process, the more likely we are to produce revisions of democratic life that are necessary if democracy is not only to survive, but to thrive. Democracy faces a myriad of challenges, including: domestic and international issues of class, gender, and racial justice; wholesale environmental destruction and the potential for rapid climate change; emerging threats to international stability in the form of terrorism, intervention and new possibilities for great power conflict; and increasing challenges of rapid globalization including an increasingly volatile global economic structure. More than any specific policy or proposal, an informed and active citizenry that deliberates with greater skill and sensitivity provides one of the best hopes for responsive and effective democratic governance, and by extension, one of the last best hopes for dealing with the existential challenges to democracy [in an] increasingly complex world.

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#### Their call to retreat from environmentally destructive practices foregrounds an artificially pure environmental state presided over by a moral narrative in which humans have violated some pre-existing "natural" order. There is no “natural world” with which you can interrogate your relationship: the natural world springs forth from chaos, and our moral regulations can’t restrict our interactions with it

**CRONON ‘96** [William; Frederick Jackson Turner Professor of History, Geography, and Environmental Studies at the University of Wisconsin at Madison; Uncommon Ground; 1996; p. 47-51]

But theme parks and shopping malls are by no means the only ways in which the virtual and the natural are converging in our time. It is well worth remembering that **some of the most dramatic environmental problems** we appear to be facing as we enter the twenty-first century **exist mainly as simulated representations in complex computer models** of natural systems. **Our awareness of the ozone hole** over the Antarctic, for instance, **depends** very much **on the ability of machines to process** large amounts of **data to produce maps of atmospheric phenomena that we ourselves could never witness at first hand.** No one has ever seen the ozone hole.However real the problem may be, our knowledge of it cannot help being virtual. **The same is** **even more** **true of** the phenomenon called **global warming, which many** people now **take to be an absolute fact of nature.** Like the ozone hole, **it too is probably real, but our knowledge** of it **could hardly be more simulated**. The computer models on which we base our **predictions** of what will happen as concentrations of greenhouse gases rise **are** in fact still **so unsophisticated that they cannot even do an accurate job of predicting past climatic change, let alone** change in **the future. Load** into them the **data for 1900, and the weather they will predict** for our present time **bears little resemblance to what we are now experiencing**. Given this rather awkward weakness in their software, the modelers have had to resort to a less trouble-some forecasting technique. They run their programs forward in time, once using the data for today's mixture of atmospheric gases, and once with doubled levels of carbon dioxide. After the computer has done its job, they compare the two runs and describe what will happen when we double the carbon dioxide. The only trouble is that this description is of the simulated doubling of a modeled gas in a virtual atmosphere, all of which bears only the most hypothetical relationship to the future world, for which we of course have no empirical data whatsoever. The model's ability to predict the future is no more assured than its proven inability to predict the past.18 But <48> because the phenomenon being predicted is so complex, because its consequences could be so catastrophic, and because we have no better way to investigate it, we have no choice but to rely on these flawed tools. In a very real sense, **global warming is the ultimate example of a virtual crisis in virtual nature—which is far from saying that it is unreal.** Instead, it is proof that **the virtual and the natural can converge in surprising ways**. None of this is very reassuring for environmentalists and others who look to nature as the ultimate foundation for their moral vision. In the face of culturally constructed landscapes and increasingly virtual experiences of the world, **many** of us **would not be at all unhappy if nature would reassert its own authority over all this** human **unreality. This may be** one reason **why environmentalists so often seem drawn to prophecies of ecological doom that offer elaborate descriptions of the disasters that will soon occur because of our misdeeds against the earth.** The genre is familiar enough to constitute yet another nature for our list. **It is the nightmare inversion of Eden** to which that eloquent U-Haul sign bore witness**: nature as demonic other**, nature as **avenging angel,** nature as **the return of the repressed. It can range from something as trivial as** those uncooperative **snails in our** Irvine **garden,** to natural disasters like earthquakes or floods, **to the hypothetical horrors of global warming.** At whatever scale we experience them, these things represent a nonhuman world that despite our best efforts **we** never quite succeed in fully controlling. Often we come close enough that we congratulate ourselves prematurely for our own triumph—and then **are surprised when** the long-silent fault or **the hundred-year flood suddenly reveals our hubris. As one man wrote to Time magazine** following the Northridge quake, "**If Mother Nature has proved one thing, it is that she can be a real ~~bitch."~~**19 Even beyond the earthquake and the fires, **California offered numerous examples of nature in apparent rebellion during our stay.** Early in the year reports surfaced of a high school in nearby Westminster where 292 **students** had been **infected with tuberculosis by a single classmate,** twelve of them with drug-resistant forms that would respond slowly to treatment if they responded at all. A little later the newspapers announced that the first **killer bees** had finally **made it to California, and** offered dire predictions of what this would mean for people who would now have to worry about being stung by them.20 More dramatically, **in April a**

**young woman jogging near her home** in the Sierra Nevada foothills **was stalked and pulled from the trail by a female mountain lion and** then quickly **mauled to death. The lioness was hunted down and shot**, lest she kill again. **The woman left behind two small children; the lion, a seven-week-old cub. It undoubtedly says something about** people's **ideas of nature,** perhaps even their ideas of human nature, **that public appeals on behalf of these young orphans** soon **yielded $9,000 for the two children ... and $21,000 for the cub.**21**What is interesting about such events is** not that they occur. After all, what could be more natural than a mountain lion killing its prey or a great fault relieving its pent-up strain? What is really intriguing is **the meaning we** <50> **assign to them,** for we have an inveterate habit of **turning them into moral fables.** The snails in my Irvine garden become small gruesome symbols of the limits to human control. The earthquakes exemplify nature's terrifying randomness—and also people's hubris in pretending that rare, irregular events can safely be ignored simply because they cannot be predicted. **The mountain lion can serve as** a token of nature's savagery—or as the **innocent victim of human beings who** in their efforts to live closer to nature unthinkingly **invade the lion's home. Every environmental disaster,** all the way up to global warming**, stands as a potential indictment of the ignorant or culpable human actions that contributed to it. The human inclination is to transform all such events into**

stories that carry **a moral lesson.** Nature as demonic other is Job's whirlwind, the horror of random suffering that is all the more terrifying because it offers no discernible justification for the pain it inflicts on the innocent and the guilty alike. **Nature as the avenging angel is the dark side of the Eden story, the punishment** that follows **in the wake of** our having listened to **Satan's seductive advice.** It is this story that makes us shake our heads so knowingly even as we sympathize with the families that lost their homes in the Laguna Can-yon fire. It's too bad, we say, but they brought it on themselves by building there. What did they expect? After all, the fires are only natural. We do this even though we ourselves have almost surely made similar bargains with nature, whether we live in the fault zone or the floodplain or the path of great storms. When we become victims, these things are never our fault, though it is easy enough for us to see how others have foolishly placed themselves in harm's way. **People are drawn to nature as avenging angel for much the same reason that they are drawn to nature as Eden**. It should by now be clear that **the two are** in fact **opposite sides of the same moral coin. The one represents** our vision of **paradise:** the good that is so utterly compelling that we feel no hesitation in claiming nature as our authority for embracing it. **The other is our vision of hell: the place where those who transgress against nature will finally endure the pain and retribution they so justly deserve.** There is a wonderfully attractive clarity in this way of thinking about nature, for **it turns the non-human world into a moral universe** whose parables and teachings are strikingly **similar to those of a religion. We need such teachings, for they give meaning and value to our lives.** To the extent that **environmentalism serves as a kind of secular religion for many people in the modern world,** it is capable of doing great good if **it can teach us the stories**, as religions often try to do, **that will help us to live better, more responsible lives.** **And yet:** we must never forget that **these stories are ours, not nature's.** The natural world does not organize itself into parables. Only people do that, because **this is our peculiarly human method for making the world make sense.** And because people differ in their beliefs, because their visions of the true, the good, and the beautiful are not always the same, they <51> inevitably differ as well in their understanding of what nature means and how it should be used—because nature is so often the place where we go searching for the fulfillment of our desires. This points to one final vision of nature that recurs everywhere in this book: nature as contested terrain. Over and over again in these essays, we encounter the central paradox of this complex cultural construct. On the one hand, **people in Western cultures use the word "nature" to describe a universal reality, thereby implying that it is and must be common to all people. On the other hand, they also pour into that word all their most personal and culturally specific values: the essence of who they think they are, how and where they should live, what they believe to be good and beautiful, why people should act in certain ways. All these things are described as natural, even though everything we know about human history and culture flies in the face of that description. The result is a human world in which these many human visions of nature are always jostling against each other, each claiming to be universal and each soon making the unhappy discovery that even its nearest neighbors refuse to acknowledge that claim.**

#### This understanding of a “natural world” abstracts our own role in consumptive practices- divorcing political solutions from personal economic choices and re-entrenching destructive practices at the level of everyday social practices, turning case

**SMITH ‘1** [Daniel Somers; Assistant Professor at Ramapo College, Carnegie Council Fellow; Place-Based Environmentalism and Global Warming: Conceptual Contradictions of American Environmentalism;*Ethics & International Affairs*; Volume 15, No. 2; 2001; http://www.carnegiecouncil.org/viewMedia.php?prmTemplateID=8&prmID=108]

Given the long and continuing migration of political and economic power to urban and corporate centers, these views have had serious implications for people living in economically and politically marginal rural areas. If the best nature is pristine and endangered, then it must be "protected," which often means excluding materially productive land uses. In some cases, as in the Northern Forest, protection may also involve allowing certain prescribed land uses (usually those that are aesthetically pleasing) to continue in a similarly idealized vision of "traditional" working landscapes. Either way, the process of objectification is a form of conceptual power that helps to make this assertion of control over the places where others live politically feasible and morally palatable. This situation is by no means restricted to the United States or other developed countries. In places like the rainforests of Amazonia and Indonesia, or the Himalayas of Nepal, indigenous and other rural inhabitants who have little political clout are frequently overwhelmed by internationally funded conservation initiatives that, fueled by well-meaning desires to protect forests, mountains, and biodiversity, can be ignorant of or even hostile toward local subsistence needs and cultures[15](http://www.carnegiecouncil.org/viewMedia.php?prmTemplateID=8&prmID=108#footnote15#footnote15). Equally important is how these popular views of nature shape the awareness and definition of environmental problems. **Infatuation with wild**, **pristine nature tends to steer our attention away from our own impacts on the larger "nature" that surrounds us, especially where these impacts are indirect or subtle, as is the case with climate change.** As William Cronon points out, **"To the extent that we live in an urban-industrial civilization but** at the same time **pretend** to ourselves **that our *real* home is in the wilderness,** to just that extent **we give ourselves permission to evade responsibility for the lives we actually lead"** [2](http://www.carnegiecouncil.org/viewMedia.php?prmTemplateID=8&prmID=108#footnote2#footnote2). Thus, we "get back to nature" by driving on the interstate or flying in a plane and then using the latest high-tech outdoor gear. **We "get away from it all" by making a flurry of commercial transactions with travel agents, adventure outfitters, and ecotourism guides. Meanwhile, we define as "problems" those activities**, like development and clear-cutting, **that have obvious effects and can be attributed to others.** If our principal goal is to keep roads out of wilderness or protect scenery from rapacious timber corporations, **it becomes much easier to ignore the implications of our own personal and seemingly insignificant actions. Instead of emphasizing the role of consumer demand in driving the** degradation of wilderness, resource extraction in more mundane landscapes, and the **buildup of greenhouse gases that threaten rare and common places alike, we can point at the proximate destroyers of pristine nature** and confirm our personal sense of virtue by supporting environmental groups that seek to stop them. **Lost is consideration of the extraordinary amount of resources used and waste generated by Americans per capita.** Mathis **Wackernagel and** William **Rees** have developed a method for calculating the "ecological footprint" of individuals and communities based on the land area required to produce various goods, and including the estimated forest land that would be required to sequester carbon emitted from burning fossil fuels. They **estimate that there are approximately 1.5 hectares of productive land available for each human, and that the average North American uses the equivalent of between four and five hectares. "If everyone** on Earth **lived like the average** Canadian or **American, we would need** at least **three** such **planets to live sustainably"** [17](http://www.carnegiecouncil.org/viewMedia.php?prmTemplateID=8&prmID=108#footnote17#footnote17). Moreover, there is little reason to expect that middle- and upper-class environmentalists contribute any less to the problem than do others. Those who live in large homes on biologically impoverished suburban plots of land and travel to the mountains on weekends or to exotic "ecotourism" destinations for vacation, undoubtedly have a greater negative impact on the environment than do average citizens.

#### Our criticism is the alternative -- our argument is that the 1AC's flawed approach to the politics of ecology make their speech act a step in the wrong direction. Voting negative entails an acknowledgement of the hybrid quality of ecology as interlocking form within cultural politics rather than separate from it -- their idealized mythos of nature is wholly incompatible with making cultural analysis a starting point for ecology

**Proctor and Pincetl '96** James D Proctor, Department of Geography, University of California, Santa Barbara, and Stephanie Pincetl, independent conservation researcher. *Environment and Planning D: Society and Space* 1996, volume 14, pages 683-708 "Nature and the reproduction of endangered space: the spotted owl in the Pacific Northwest and southern California" <http://www.geog.ucsb.edu/~jproctor/pdf/E&P1996.pdf>

Our intent in this paper is to examine how **nature is being literally and figuratively constructed in the context of the nationally significant biodiversity-conservation efforts** taking place in the Far West of the USA. **These efforts are largely built on a crude realist premise that nature is some biophysical entity under siege by humans**. Yet the threads of nature and culture are somewhat more entangled than many conservationists are willing to admit; as Raymond Williams observed, "The idea of nature contains, though often unnoticed, an extraordinary amount of human history" (1980, page 67). In the last decade scholars from geography and other fields have explored the notion of nature as a social construct (Bennett and Chaloupka, 1993; Burgess, 1990; Cosgrove, 1984; Cronon, 1995; Demeritt, 1994; Evernden, 1993; FitzSimmons, 1989; Harrison and Burgess, 1994; Lynch, 1993; Milton, 1993; Oeschlaeger, 1991; Olwig, 1984; Simmons, 1993; Smith, 1990). Throughout this literature, emphasis has generally been placed on a **postempiricist epistemology, on nature as more than a set of plainly evident facts**. This position has become so diffuse in contemporary critical inquiry into questions of nature and environment that the epistemological gap between the literature of social constructivism and that of conservationism appears impossible to bridge. **Without further development the postempiricist position of social constructivism becomes problematic in its flirtation with epistemological relativism as well as in its ontological silence**. In its strong (and patently self-contradictory) form, relativism asserts that all truth is a matter of context, and that context is sufficiently heterogeneous to mitigate against any possibility of intersubjectively approved truth claims (Krausz, 1989; Margolis, 1986). Though not always explicitly addressed, **epistemological relativism is operationally denied in part, or at least cordoned off to less troublesome territory, by virtually all social theoretical accounts (save perhaps those advancing nihilist platforms).** Yet the social construction of nature literature is rarely clear in this regard. An epistemological position that is a refinement of the social construction of nature argument is Katherine Hayles's (1995) constrained constructivism. Hayles accepts social constructivism, but argues that constructivism occurs within a bounded set of possibilities, where the bounds are comprised of biophysical constraints: "No matter how gravity is conceived, no viable model could predict that when someone steps off a cliff on earth, she will remain spontaneously suspended in midair. Although the constraints that lead to this result are interpreted differently in different paradigms, they operate universally to eliminate certain configurations from the realm of possible answers" (page 52). Hayles's position provides a means to consider biophysical processes as actors in shaping knowledges of nature, and in responding to schemes of human practice based on these knowledges. Nonhuman species, for example, cannot adapt to all biodiversity-management schemes with equal success-though any judgment of success is also mediated through particular knowledges, which may highlight or obscure the status of certain species. **Biological science thus plays the paradoxical role in biodiversity conservation of interpreting the realities of threatened species and their habitats via an epistemological language of thoroughly human origin. The social construction of nature is more than an epistemological project**, of course. Differentiated human forces have transformed the earth (Turner et ai, 1990) with biophysical impacts that are increasingly becoming a focus of concern, leading to widespread conservation efforts. Yet again, **these impacts are not**

**understood outside of socially constructed knowledges of nature**. The ontological (realitytransforming) and epistemological (knowledge-creating) dimensions of the social construction of nature are linked in complex ways. Bruno Latour (1993) weaves together these dimensions of the social construction of nature through his position that the mixing of the human and the nonhuman in reality-a process he terms 'translation'-has resulted not merely in altered 'natures' but in nature -culture hybrids, joint biophysical- human networks. **Latour cites ozone depletion as an example; this is typically considered a biophysical phenomenon of anthropogenic origin**. **His account**, however, **of the discourse surrounding ozone depletion suggests that the ontological elements of culture and nature are more inalienably interwoven**: "On page four of my daily newspaper, I learn that **the measurements taken above the Antarctic are not good this year**: the hole in the ozone layer is growing ominously larger. Reading on, I turn from upper-atmosphere chemists to Chief Executive Officers of Atochem and Monsanto, **companies** that **are modifying their assembly lines in order to replace the innocent chlorofluorocarbons, accused of crimes against the ecosphere**. A few paragraphs later, I come across **heads of state of major industrialized countries who are getting involved with chemistry, refrigerators**, aerosols and inert gases ... Toward the bottom of the page, **Third World countries and ecologies add their grain of salt and talk about international treaties, moratoriums, the rights of future generations**, and the right to development. **The same article mixes together chemical reactions and political reactions. A single thread links the most esoteric sciences and the most sordid politics, the most distant sky and some factory in the Lyon suburbs, danger on a global scale and the impending local elections or the next board meeting"** (1993, page 1). Latour argues that modernity is characterized not only by the proliferation of nature - culture hybrids, but by the contradictory epistemological practices of purification, of radical distancing of objects from subjects, of 'nature' from 'culture', thus hyperpolarizing the discourses between, for instance, the natural sciences and cultural studies: "Our intellectual life is out of kilter. Epistemology, the social sciences, the sciences of texts-all have their privileged vantage point, provided that they remain separate. If the creatures we are pursuing cross all three spaces, we are no longer understood. Offer the established disciplines some fine sociotechnological network, some lovely translations, and the first group will extract our concepts and pull out all the roots that might connect them to society or to rhetoric; the second group will erase the social the political dimensions, and purify our network of any object; the third group, finally, will retain our discourse and rhetoric but purge our work of any undue references to reality*horresco referens*-or to power play. In the eyes of our critics the ozone hole above our heads, the moral law in our hearts, the autonomous text, may each be of interest, but only separately" (1993, page 5). It is thus not surprising, following Latour's argument, that there has been so little engagement of the social-construction-of-nature thesis by natural scientists, as both sides have each attempted to stake their contrary epistemological claims on the same reality. In recent times, in fact, natural-**science-based conservationists have strongly rejected social constructivism because of what they perceive to be its nihilist leanings** (Soule and Lease, 1995). **The irony of this rejection, by some natural scientists and others, is that it is predicated on a particular social construction of nature-one which is purified of its embeddedness in cultural schemes of knowledge and transformative practices, and hence stakes out this pure nature as worthy of protection from adverse human influence**. The close association of biodiversity-protection efforts with applied natural science (for example, conservation biology), coupled with the predominant objective of these efforts in the preservation of more quintessentially natural places, is thus understandable in this light.

### 1nc k

#### Identity politics fracture movements – the aff’s insistence on specific subjectivities policy as a precondition for political pedagogy ignores the commonality of oppression makes Empire’s divide and conquer tactics more effective

**Smith ’95** (Sharon, columnist for Socialist Worker and author of Women’s Liberation and Socialism, Mistaken Identity: or Can Identity Politics Liberate the Oppressed, http://pubs.socialistreviewindex.org.uk/isj62/smith.htm)

Among many people on the left today the Marxist emphasis on the centrality of class and class struggle – as key both to understanding and to transforming society – is widely disparaged. Many who once looked to the working class movement as key to social change have shifted their focus toward the 'new social movements'. This term covers a broad range of movements which originated in the 1960s and 1970s, including those against the oppression of women, blacks and lesbians and gays, as well as those organized around ecology, disarmament and a variety of other issues. Key to this strategy for social change, which has been carried to its logical extreme more recently through the development of 'identity politics,' is the idea that only those experiencing a particular form of oppression can either define it or fight against it. For people newly active on the left, this way of organizing may seem like common sense: it should go without saying that those who are oppressed should fight against their own oppression. Moreover, the prevalence of sexist, racist and anti-gay ideas in society at large makes it sometimes appear as if the bigotry which divides people can never be fully overcome. This pessimistic notion forms the theoretical basis for identity politics. It is assumed that a particular movement must include only those who face a specific form of oppression. To one degree or another, all the other people in society are part of the problem – in some way they benefit from oppression and have an interest in maintaining it. For this same reason it follows that each oppressed group should have its own distinct and separate movement. Such movements therefore tend to be organized on the basis of 'autonomy' or independence – from each other and from the socialist movement. They tend also to be organized independent of any class basis. But this logic is flawed. It would be disastrous, for example, if the fight against fascism in Europe today were limited to only members of those racial groups who are immediately targeted by fascists. The advance of the fascist movement is not only a threat to 'foreign born' workers, but to all workers. To most effectively counter the recent rise of fascists in Europe, all those who oppose the far right, whatever race they happen to be, should be encouraged to join the anti-fascist movement. Any fight against oppression, if it is to succeed, must be based upon building the strongest possible movement. And that can only happen when a movement unites different groups of activists into a common struggle. It is not, as is widely assumed within these political milieu, necessary to face a particular oppression in order to fight against that oppression, any more than it is necessary to be destitute in order to fight against poverty. Many people who do not experience a particular form of oppression can learn to identify with those who do, and can be enlisted as allies in a common struggle. The politics of identity cannot point the way towards building the kind of movement which can actually end oppression. In fact, among existing organizations founded on the basis of identity politics, the tendency has been towards fragmentation and disintegration, rather than growth. More often than not among movements organized on the basis of identity politics the enemy includes 'everyone else' – perceived as an amorphous, backward blob which makes up the rest of society. Instead of seeing the class struggle as a way to overcome oppression, the working class is seen as a barrier to this process. At its heart, identity politics is a rejection of the notion that the working class can be the agent for social change, and a pessimism about the possibility for significant, never mind revolutionary, social transformation

#### Structuralism is key – using narrative pedagogy to inform politics destroys the scientific basis on which we can overcome capitalism

**Communist Workers and Peasants Party, March 27, 2004**

[*The Truth is Out There! Because Certainty Isn’t in Here*, http://www.geocities.com/cmkp\_pk/epistemology.htm]

Post-modernism and post-sructuralism are modern forms of idealism.  It is not a coincidence that they share the hatred for science that was a hallmark of pre-capitalist idealism.  Post-modernism and post-structuralism is the “theoretical machine breaking” of the modern world.  In the early decades of the industrial revolution workers thought that their oppression was the product of machines and not of the social relations of production.  They therefore, broke machines in an attempt to roll back history.  But of course this was a primitive form of rebellion and did not work. Similarly, post-modernism and post-structuralism is machine breaking by the intellectual (without the consequences that workers faced for their rebellion).  But curiously, the attack by post-modernists and post-structuralists on science, which is lauded as the greatest things since the Enlightenment, is to the particular taste of the decaying bourgeoisie of metropolitan countries.  The decaying and counter-revolutionary bourgeoisie of the metropolitan centres supports both reaction and idealism in third world countries in the form of “religious intolerance”, and idealism in its modern post-modernist and post-structuralist form in first world countries.  Both these form, in their particular context, help to obscure the clarity so necessary for a emancipation.  The post-modernists, centred in European society, are themselves the product of a failed and despondent generation of sixties “radicals” seeking to reintegrate themselves into the bourgeois world.  In this context, their modern form of idealism is extremely useful to the bourgeoisie for it obscures the objective basis of exploitation and the necessary steps (especially organisational and political) to solve the problems of the world today.  It is not a coincidence that the post-modernists and post-structuralists are firmly rooted in the social studies department of the educational institutes of the West.  The post-structuralists perform a great service to the capitalist world by substituting the “word” itself as a revolutionary “act”.  The familiar expression of “theory itself as action” in this context (and only in this particular context), translates in terms of praxis into a rather benign and harmless preoccupation on the part of certain academics to interpret and reinterpret discourse. In conclusion, social science must begin with and can only begin with the premise that the world exists as an objective and understandable entity.  An analysis is scientific in the measure that it accords with reality and, in doing so, informs practice.  Furthermore, the post-modern critique of materialist epistemology (“science” is a *construct*) is self-contradictory subjectivism.  Post-modernism and post-structuralism are supported by the reactionary bourgeoisie of Europe to befuddle and confuse the revolutionary potential of students and prevent the emergence of a revolutionary socialist intelligentsia.  These ideas play a retrogressive role in the development of class struggle and history.

#### Capitalism causes extinction and turns the case

**Brown**, Charles [Professor of Economics and Research Scientist at the University of Michigan] May 13th 20**05** (http://archives.econ.utah.edu/archives/pen-l/2005w15/msg00062.htm)

The capitalist class owns the factories, the banks, and transportation-the means of production and distribution. Workers sell their ability to work in order to acquire the necessities of life. Capitalists buy the workers' labor, but only pay them back a portion of the wealth they create. Because the capitalists own the means of production, they are able to keep the surplus wealth created by workers above and beyond the cost of paying worker's wages and other costs of production. This surplus is called "profit" and consists of unpaid labor that the capitalists appropriate and use to achieve ever-greater profits. These profits are turned into capital which capitalists use to further exploit the producers of all wealth-the working class. Capitalists are compelled by competition to seek to maximize profits. The capitalist class as a whole can do that only by extracting a greater surplus from the unpaid labor of workers by increasing exploitation. Under capitalism, economic development happens only if it is profitable to the individual capitalists, not for any social need or good. The profit drive is inherent in capitalism, and underlies or exacerbates all major social ills of our times. With the rapid advance of technology and productivity, new forms of capitalist ownership have developed to maximize profit. The working people of our country confront serious, chronic problems because of capitalism. These chronic problems become part of the objective conditions that confront each new generation of working people. The threat of nuclear war, which can destroy all humanity, grows with the spread of nuclear weapons, space-based weaponry, and a military doctrine that justifies their use in preemptive wars and wars without end. Ever since the end of World War II, the U.S. has been constantly involved in aggressive military actions big and small. These wars have cost millions of lives and casualties, huge material losses, as well as trillions of U.S. taxpayer dollars. Threats to the environment continue to spiral, threatening all life on our planet. Millions of workers are unemployed or insecure in their jobs, even during economic upswings and periods of "recovery" from recessions. Most workers experience long years of stagnant real wages, while health and education costs soar. Many workers are forced to work second and third jobs to make ends meet. Most workers now average four different occupations during their lifetime, being involuntarily moved from job to job and career to career. Often, retirement-age workers are forced to continue working just to provide health care for themselves. With capitalist globalization, jobs move as capitalists export factories and even entire industries to other countries. Millions of people continuously live below the poverty level; many suffer homelessness and hunger. Public and private programs to alleviate poverty and hunger do not reach everyone, and are inadequate even for those they do reach. Racism remains the most potent weapon to divide working people. Institutionalized racism provides billions in extra profits for the capitalists every year due to the unequal pay racially oppressed workers receive for work of comparable value. All workers receive lower wages when racism succeeds in dividing and disorganizing them. In every aspect of economic and social life, African Americans, Latinos, Native Americans, Asian a nd Pacific Islanders, Arabs and Middle Eastern peoples, and other nationally and racially oppressed people experience conditions inferior to that of whites. Racist violence and the poison of racist ideas victimize all people of color no matter which economic class they belong to. The attempts to suppress and undercount the vote of the African American and other racially oppressed people are part of racism in the electoral process. Racism permeates the police, judicial and prison systems, perpetuating unequal sentencing, racial profiling, discriminatory enforcement, and police brutality. The democratic, civil and human rights of all working people are continually under attack. These attacks range from increasingly difficult procedures for union recognition and attempts to prevent full union participation in elections, to the absence of the right to strike for many public workers. They range from undercounting minority communities in the census to making it difficult for working people to run for office because of the domination of corporate campaign funding and the high cost of advertising. These attacks also include growing censorship and domination of the media by the ultra-right; growing restrictions and surveillance of activist social movements and the Left; open denial of basic rights to immigrants; and, violations of the Geneva Conventions up to and including torture for prisoners. These abuses all serve to maintain the grip of the capitalists on government power. They use this power to ensure the economic and political dominance of their class. Women still face a considerable differential in wages for work of equal or comparable value. They also confront barriers to promotion, physical and sexual abuse, continuing unequal workload in home and family life, and male supremacist ideology perpetuating unequal and often unsafe conditions. The constant attacks on social welfare programs severely impact single women, single mothers, nationally and racially oppressed women, and all working class women. The reproductive rights of all women are continually under attack ideologically and politically. Violence against women in the home and in society at large remains a shameful fact of life in the U.S.

#### Thus, we demand rejection of the aff in favor of communal relations of solidarity outside the state to shelter the oppressed from global capitalism

**Only by rejecting capitalism's drive to divide populations can we lead to an alternative to capitalism**

**Marcuse**, German Philosopher and Professor at Columbia and Harvard, in ’**69** [Herbert, member of the Frankfurt School, An Essay on Liberation, p. 85-91]

More recently, the break in the unity of the communist orbit, the triumph of the Cuban revolution, Vietnam, and the "cultural revolution" in China have changed this picture. The possibility of constructing socialism on a truly popular base, without the Stalinist bureaucratization and the danger of a nuclear war as the imperialist answer to the emergence of this kind of socialist power, has led to some sort of common interest between the Soviet Union on the one side and the United States on the other. In a sense, this is indeed the community of interests of the "haves" against the "have nots," of the Old against the New. The "collaborationist" policy of the Soviet Union necessitates the pursuance of power politics which increasingly reduces the prospect that Soviet society, by virtue of its basic institutions alone (abolition of private ownership and control of the means of production: planned economy) is still capable of making the transition to a free society. And yet, the very dynamic of imperialist expansion places the Soviet Union in the other camp: would the effective resistance in Vietnam, and the protection of Cuba be possible without Soviet aid? However, while we reject the unqualified convergence thesis, according to which -at least at present -the assimilation of interests prevails UPOIl the conflict between capitalism and Soviet Socialism, we cannot minimize the essential difference between the latter and the new historical efforts to construct socialism by developing and creating a genuine solidarity between the leadership and the liberated victims of exploitation. The actual may considerably deviate from the ideal, the fact remains that, for a whole generation, "freedom," "socialism," and "liberation" are inseparable from Fidel and Che and the guerrillas -not because their revolutionary struggle could furnish the model for the struggle in the metropoles, but because they have recaptured the truth of these ideas, in the dayto- day fight of men and women for a life as human beings: for a new life. What kind of life? We are still confronted with the demand to state the "concrete alternative." The demand is meaningless if it asks for a blueprint of the specific institutions and relationships which would be those of the new society: they cannot be determined a priori; they will develop, in trial and error, as the new society develops. If we could form a concrete concept of the alternative today, it would not be that of an alternative; the possibilities of the new society are sufficiently "abstract," i.e., removed from and incongruous with the established universe to defy any attempt to identify them in terms of this universe. However, the question cannot be brushed aside by saying that what matters today is the destruction of the old, of the powers that be, making way for the emergence of the new. Such an answer neglects the essential fact that the old is not simply bad, that it delivers the goods, and that people have a real stake in it. There can be societies which are much worse – there are such societies today. The system of corporate capitalism has the right to insist that those who work for its replacement justify their action. But the demand to state the concrete alternatives is justified for yet another reason. Negative thinking draws whatever force it may have from its empirical basis: the actual human condition in the given society, and the "given" possibilities to transcend this condition, to enlarge the realm of freedom. In this sense, negative thinking is by virtue of its own internal concepts "positive": oriented toward, and comprehending a future which is "contained" in the present. And in this containment (which is an important aspect of the general containment policy pursued by the established societies), the future appears as possible liberation. It is not the only alternative: the advent of a long period of "civilized" barbarism, with or without the nuclear destruction, is equally contained in the present. Negative thinking, and the praxis guided by it, is the positive and positing effort to prevent this utter negativity. The concept of the primary, initial institutions of liberation is familiar enough and concrete enough: collective ownership, collective control and planning of the means of production and distribution. This is the foundation, a necessary but not sufficient condition for the alternative: it would make possible the usage of all available resources for the abolition of poverty, which is the prerequisite for the turn from quantity into quality: the creation of a reality in accordance with the new sensitivity and the new consciousness. This goal implies rejection of those policies of reconstruction, no matter how revolutionary, which are bound to perpetuate (or to introduce) the pattern of the unfree societies and their needs. Such false policy is perhaps best summed up in the formula "to catch up with, and to overtake the productivity level of the advanced capitalist countries." What is wrong with this formula is not the emphasis on the rapid improvement of the material conditions but on the model guiding their improvement. The model denies the alternative, the qualitative difference. The latter is not, and cannot be, the result of the fastest possible attainment of capitalist productivity, but rather the development of new modes and ends of production "new" not only (and perhaps not at all) with respect to technical innovations and production relations, but with respect to the different human needs and the different human relationships in working for the satisfaction of these needs. These new relationships would be the result of a "biological" *solidarity* in work and purpose, expressive of a true harmony between social and individual needs and goals, between recognized necessity and free development -the exact opposite of the administered and enforced harmony organized in the advanced capitalist (and socialist?) countries. It is the image of this solidarity as elemental, instinctual, creative force which the young radicals see in Cuba, in the guerrillas, in the Chinese cultural revolution. Solidarity and cooperation: not all their forms are liberating. Fascism and militarism have developed a deadly efficient solidarity. Socialist solidarity is autonomy: selfdetermination begins at home -and that is with every I, and the We whom the I chooses. And this end must indeed appear in the means to attain it, that is to say, in the strategy of those who, within the existing society, work for the new one. If the socialist relationships of production are to be a new way of life, a new Form of life, then their existential quality must show forth, anticipated and demonstrated, in the fight for their realization. Exploitation in all its forms must have disappeared from this fight: from the work relationships among the fighters as well as from their individual relationships. Understanding, tenderness toward each other, the instinctual consciousness of that which is evil, false, the heritage of oppression, would then testify to the authenticity of the rebellion. In short, the economic, political, and cultural features of a classless society must have become the basic needs of those who fight for it. This ingression of the future into the present, this depth dimension of the rebellion accounts, in the last analysis, for the incompatibility with the traditional forms of the political struggle. The new radicalism militates against the centralized bureaucratic communist as well as against the semi-democratic liberal organization. There is a strong element of spontaneity, even anarchism, in this rebellion, expression of the new sensibility, sensitivity against domination: the feeling, the awareness, that the joy of freedom and the need to be free must precede liberation.Therefore the aversion against preestablished Leaders, apparatchiks of all sorts, politicians no matter how leftist. The initiative shifts to small groups, widely diffused, with a high degree of autonomy, mobility, flexibility. To be sure, within the repressive society, and against its ubiquitous apparatus, spontaneity by itself cannot possibly be a radical and revolutionary force. It can become such a force only as the result of enlightenment, education, political practice -in this sense indeed, as a result of organization. The anarchic element is an essential factor in the struggle against domination: preserved but disciplined in the preparatory political action, it will be freed and aufgehoben in the goals of the struggle. Released for the construction of the initial revolutionary institutions, the antirepressive sensibility, allergic to domination, would militate against the prolongation of the "First Phase," that is, the authoritarian bureaucratic development of the productive forces. The new society could then reach relatively fast the level at which poverty could be abolished (this level could be considerably lower than that of advanced capitalist productivity, which is geared to obscene aflluence and waste). Then the development could tend toward a sensuous culture, tangibly contrasting with the gray-on-gray culture of the socialist societies of Eastern Europe. Production would be redirected in defiance of all the rationality of the Performance Principle; socially necessary labor would be diverted to the construction of an aesthetic rather than repressive environment, to parks and gardens rather than highways and parking lots, to the creation of areas of withdrawal rather than massive fun and relaxation. Such redistribution of socially necessary labor (time), incompatible with any society governed by the Profit and Performance Principle, would gradually alter society in all its dimensions -it would mean the ascent of the Aesthetic Principle as Form of the Reality Principle: a culture of receptivity based on the achievements of industrial civilization and initiating the end of its selfpropelling productivity. Not regression to a previous stage of civilization, but return to an imaginary *temps perdu* in the real life of mankind: progress to a stage of civilization where man has learned to ask for the sake of whom or of what he organizes his society; the stage where he checks and perhaps even halts his incessant struggle for existence on an enlarged scale, surveys what has been achieved through centuries of misery and hecatombs of victims, and decides that it is enough, and that it is time to enjoy what he has and what can be reproduced and refined with a minimum of alienated labor: not the arrest or reduction of technical progress, but the elimination of those of its features which perpetuate man's subjection to the apparatus and the intensification of the struggle for existence -to work harder in order to get more of the merchandise that has to be sold. In other words, electrification indeed, and all technical devices which alleviate and protect life, all the mechanization which frees human energy and time, all the standardization which does away with spurious and parasitarian "personalized" services rather than multiplying them and the gadgets and tokens of exploitative affiuence. In terms of the latter (and only in terms of the latter), this would certainly be a regression -but freedom from the rule of merchandise over man is a precondition of freedom. The construction of a free society would create new incentives for work. In the exploitative societies, the so‐called work instinct is mainly the (more or less effectively) introjected necessity to perform productively in order to earn a living. But the life instincts themselves strive for the unification and enhancement of life; in nonrepressive sublimation they would provide the libidinal energy for work on the development of a reality which no longer demands the exploitative repression of the Pleasure Principle. The "incentives" would then be built into the instinctual structure of men. Their sensibility would register, as biological reactions, the difference between the ugly and the beautiful, between calm and noise, tenderness and brutality, intelligence and stupidity, joy and fun, and it would correlate this distinction with that between freedom and servitude. Freud's last theoretical conception recognizes the erotic instincts as work instincts ‐work for the creation of a sensuous environment. The social expression of the liberated work instinct is cooperation, which, grounded in solidarity, directs the organization of the realm of necessity and the development of the realm of freedom. And there is an answer to the question which troubles the minds of so many men of good will: what are the people in a free society going to do? The answer which, I believe, strikes at the heart of the matter was given by a young black girl. She said: for the first time in our life, we shall be free to think about what we are going to do.

### Case defense

#### Their narrative strategy forces us to marginalize their experience or concede the debate – that destroys coalition building and harms progressive political strategies.

Craig IRELAND American Culture @ Bilkent 02 "The Appeal to Experience and its Consequences" Cultural Critique 52 Fall 2002p.87-88

" Once an arcane philosophical term, experience over the last three decades has become a general buzzword. By the 1970s, experience spilled over into the streets, so to speak, and it has since then become the stuff of programmatic manifestos and has been enlisted as the found from which microstrategies of resistance and subaltern counterhistories can be erected. But for all the blows and counterblows that have carried on tor over"\*three decades between those who appeal to the counterhegemonic potential of experience and those who see such appeals as naive voluntarism, such debates show no signs of abating. On the contrary, they have become yet more strident, as can be seen by Michael Pickering's recent attempt to rehabilitate the viability of the term "experience" for subaltern historiography by turning to E. P. Thompson and Dilthey and, more recently still, by Sonia Kruks's polemical defense of experience for subaltern inquiry by way of a reminder that poststructuralist critics of experience owe much to those very thinkers, from Sartre to Merleau-Ponty, whom they have debunked as if in oedipal rebellion against their begetters. Such debates over experience have so far gravitated around issues of epistemology and agency, pitting those who debunk experience as the stuff of an antiquated philosophy of consciousness against those who argue that subaltern experience provides an enclave against strong structural determination. Lost in such debates, however, have been the potential consequences of appeals to immediate experience as a ground for subaltern agency and specificity. And it is just such potential consequences that will be examined here, These indeed demand our attention, for more is at stake in the appeal to experience than some epistemological faux pas. By so wagering on the perceived immediacy of experience as the evidence for subaltern specificity and counterhegemonic action, appeals to immediate experience, however laudable their goal, end up unwittingly naturalizing what is in fact historical, and, in so doing, they leave the door as wide-open to a progressive politics of identity as to a retreat to neoethnic tribalism. Most alarming about such appeals to experience is not some failure of epistemological nerve – it is instead their ambiguous political and social ramifications. And these have reverberate beyond academia and found an echo in para-academia – so much so that experience has increasingly become the core concept or key word of subaltern groups and the rallying call for what Craig Calhoun calls the “new social movements” in which “experience is made the pure ground of knowledge, the basis of an essentialized standpoint of critical awareness” (468 n.64). The consequences of such appeals to experience can best be addressed not by individually considering disparate currents, but by seeking their common denominator. And in this regard, E.P. Thompson will occupy the foreground. It is safe to say that what started as an altercation between Thompson and Althusser has since spawned academic and para-academic "histories from below" and subaltern cultural inquiries that, for all their differences, share the idea that the identities and counterhistories of the disenfranchised can be buttressed by the specificity of a group's concrete experiences. Much theorizing on experience by certain cultural and historiographical trends, as many have already pointed out, has been but a variation on a persistent Thompsonian theme in which Thompson's "kind of use of experience has the same foundational status if we substitute 'women's' or 'black' or 'lesbian' or 'homosexual' for 'working class'" (Scott, 786)

#### As undeniable truth, the 1ac's description of experience turns into a new form of authoritarian pedagogy. Presenting the self as evidence prevents a critical inquiry into what authorities experience itself. The discourse of experience becomes a trump card-a fascist prohibition on what can be criticized and what stands as absolute.

Rey CHOW ’98 Modern Culture and Media @ BrownEthics After Idealism

In the foregoing pages, I have tried to argue that fascism needs to be understood not only in its negative but more importantly in its positive aspects, and that fascism's production of idealism is a projectional production of luminosity-as-self-evidence, "In an essay entitled "The Evidence of Experience," which does not at first seem to have anything to do with the topic of fascism, Joan Scott has made comparable observations about the use of “experience” in the North American academy today. In the general atmosphere of a felt need to deconstruct universalist: claims about human history, Scott writes, scholars of various disciplines have increasingly turned to personal experience as a means of such deconstruction. However, she argues, by privileging experience as the critical weapon against univeralisms, we are leaving open the question as to what authorizes experience itself. Scott charges that the appeal to experience “as uncontestable evidence and as an originary point of explanation” for historical difference has increasingly replaced the necessary task of exploring “how difference is established, how it operates, now, and in what ways it constitutes subjects who see and act in the world.” For me, what is especially interesting is the manner in which Scott emphasizes the role of vision and visibility throughout her essay. Beginning her discussion with Samuel R. Delany's autobiographical meditation, The Motion of Light in Water, Scott notes that "a metaphor of visibility as literal transparency is crucial to his project." She concludes that, for Delany, "knowledge is gained through vision; vision is a direct apprehension of a world of transparent objects."41 What Scott articulates here is the other side of Virilio's argument about the coterminous nature of visual perception and destruction – that is, the coterminous nature of visual perception and knowledge: "Seeing is the origin of knowing.” While the technology of seeing, or seeing-as-technology, has become an inalienable part of the operation of militarism and fascist propaganda, Scott shows how it has also come to dominate our thinking about identity so much so that visibility and luminosity are the conditions toward which accounts of difference and alternative histories derived from personal experience” now aspire. This kind of aspiration, Scott implies, is an aspiration toward the self-evidence of the self’s (personal) experience. The self as evidence this means that the self, like the Stalin myth in Soviet cinema, is so transparent, so shone through with light, that it simply is without need for further argument about its history or what Scott calls its “discursive character.”

#### Their speech act doesn’t spill over to change anything but their own minds – Structural constraints

**Atchison and Panetta 9** – \*Director of Debate at Trinity University and \*\*Director of Debate at the University of Georgia (Jarrod, and Edward, “Intercollegiate Debate and Speech Communication: Issues for the Future,” The Sage Handbook of Rhetorical Studies, Lunsford, Andrea, ed., 2009, p. 317-334)

The first problem that we isolate is the difficulty of any individual debate to generate community change. Although any debate has the potential to create problems for the community (videotapes of objectionable behavior, etc.), rarely does any one debate have the power to create community-wide change. We attribute this ineffectiveness to the structural problems inherent in individual debates and the collective forgetfulness of the debate community. The structural problems stem from the current tournament format that has remained relatively consistent for the past 30 years. Debaters engage in preliminary debates in rooms that are rarely populated by anyone other than the judge. Judges are instructed to vote for the team that does the best debating, but the ballot is rarely seen by anyone outside the tabulation room. Given the limited number of debates in which a judge actually writes meaningful comments, there is little documentation of what actually transpired during the debate round. During the period when judges interact with the debaters, there are often external pressures (filing evidence, preparing for the next debate, etc.) that restrict the ability of anyone outside the debate to pay attention to the judges’ justification for their decision. Elimination debates do not provide for a much better audience because debates still occur simul- taneously, and travel schedules dictate that most of the participants have left by the later elimination rounds. It is difficult for anyone to substantiate the claim that asking a judge to vote to solve a community problem in an individual debate with so few participants is the best strategy for addressing important problems.

#### focus on territorial integrity and fidelity to historical narratives denies agency over replicates colonialism – our starting point of embracing contingent strategies of repudiation and building coalitions together rather than tearing them apart internal link turns their K

**Gupta and Ferguson 1992** ]Akhil, Department of Anthropology, Stanford University; James, Department of ¶ Anthropology, University of California, Irvine; “Beyond ‘Culture’: Space, Identity, and the Politics of Difference”, ¶ Cultural Anthropology 7.1 page 6-7, JSTOR]

Last, and most important, challenging the ruptured landscape of independent nations and autonomous ¶ cultures raises the question of understanding social change and cultural transformation as situated within ¶ interconnected spaces.The presumption that spaces are autonomous has enabled the power of ¶ topography to conceal successfully the topography of power**.** The inherently fragmented space assumed in ¶ the definition of anthropology as the study of cultures (in the plural) may have been one of the reasons ¶ behind the long-standing failure to write anthropology's history as the biography of imperialism. For if one ¶ begins with the premise that spaces have always been hierarchically interconnected, instead of naturally ¶ disconnected, then cultural and social change becomes not a matter of cultural contact and articulation but ¶ one of rethinking difference through connection. To illustrate, let us examine one powerful model of cultural ¶ change that attempts to relate dialectically the local to larger spatial arenas: articulation. Articulation models, ¶ whether they come from Marxist structuralism or from "moral economy," posit a primeval state of autonomy ¶ (usually labeled "precapitalist"), which is then violated by global capitalism. The result is that both local and ¶ larger spatial arenas are transformed, the local more than the global to be sure, but not necessarily in a ¶ redetermined direction. This notion of articulation allows one to explore the richly unintended consequences ¶ of, say, colonial capitalism, where loss occurs alongside invention. Yet, by taking a preexisting, localized ¶ "community" as a given starting point, it fails to examine sufficiently the processes (such as the structures of ¶ feeling that pervade the imagining of community) that go into the construction of space as place or locality in ¶ the first instance. In other words, instead of assuming the autonomy of the primeval community, we need ¶ to examine how it was formed as a community out of the interconnected space that always already ¶ existed. Colonialism, then, represents the displacement of one form of interconnection by another. This is not ¶ to deny that colonialism, or an expanding capitalism, does indeed have profoundly dislocating effects on ¶ existing societies. But by always foregrounding the spatial distribution of hierarchical power relations, we ¶ can better understand the process whereby a space achieves a distinctive identity as a place. Keeping in mind ¶ that notions of locality or community refer both to a demarcated physical space and to clusters of interaction, ¶ we can see that the identity of a place emerges by the intersection of its specific involvement in a system of ¶ hierarchically organized spaces with its cultural construction as a community or locality.

#### Neoliberalism is a bad frame for political analysis

**Worstall 10** [Tim, “More on this neo-liberalism thing”, Adam Smith Institute, March 7]

Neo-liberalism gets blamed for a lot of things: that bankers couldn't see a housing bubble for example. It's also been said that the insistence that the poor countries of the world do the same things to get rich that we did to get rich - trade, get governments out of the way, try to create wealth, these sorts of things - was neo-liberalism conspiring to keep them poor. As we all know, China moved marketwards from a near insane communism and has been growing explosively since. India moved marketwards from a near insane Fabianism and has been growing explosively since....but what about Africa? It would be fair to say that this neo-liberalism thing got there a little later. Mid 1990s sounds about right, so, how's it been [working](http://www.columbia.edu/%7Exs23/papers/pdfs/Africa_Paper_VX3.2.pdf)? The conventional wisdom that Africa is not reducing poverty is wrong..... we estimate income distributions, poverty rates, and inequality and welfare indices for African countries for the period 1970‐2006. We show that: African poverty is falling and is falling rapidly. .... The growth spurt that began in 1995 decreased African income inequality instead of increasing it.  African poverty reduction is remarkably general: it cannot be explained by a large country, or even by a single set of countries possessing some beneficial geographical or historical characteristic. All classes of countries, including those with disadvantageous geography and history, experience reductions in poverty. In particular, poverty fell for both landlocked as well as coastal countries; for mineral‐rich as well as mineral‐poor countries; for countries with favorable or with unfavorable agriculture; for countries regardless of colonial origin; and for countries with below‐ or above median slave exports per capita during the African slave trade. How amazing: our melanin enhanced brethren are indeed our brethren, they react to and take advantage of economic incentives just as we do. Allowed the freedom to create, innovate and create wealth, wealth they create. Whatever ordure dumped upon them from that great height in the past by near insane economic policies and the thugs and crooks that have ruled them, peace, easy taxes and the tolerable administration of justice have been doing their thing. Or as those desiring that near a billion people escape poverty and join us in enjoying the fruits of the bourgeois lifestyle should perhaps be saying, neo-liberalism is dead: long live neo-liberalism.

#### Creates a sloppy political frame that forecloses pedagogical resistance

**Hartwich 9** [Oliver is a Research Fellow at the Centre for Independent Studies, Executive Highlights No 829, “The great neoliberal misunderstanding”, Centre for Independent Studies, May 21] //khirn

When Kevin Rudd published his lengthy essay on the global financial crisis, it was not only an attempt to strengthen his reputation as Australia’s philosopher prime minister but also meant to mark the day of reckoning for neoliberalism. ‘Neoliberalism,’ Mr Rudd told us, ‘has been revealed as little more than personal greed dressed up as an economic philosophy.’ Despite this stark rhetoric, Rudd’s essay only revealed one thing: Neoliberalism is one of the most sloppily used words in today’s political debates. The original philosophy of neoliberalism, of which the prime minister seems unaware, was decidedly anti-capitalist and the very opposite of a laissez faire free-for-all. The term neoliberalism was invented at the time of the Great Depression in the 1930s. The belief in eternal prosperity had been shattered by Wall Street’s ‘Black Friday’ and the events that followed. Liberalism and capitalism were blamed for the global economic crisis. Around the world, economists like John Maynard Keynes and politicians like US President Franklin D Roosevelt were looking for alternatives to a system that they thought had failed spectacularly. In Germany, too, the mood had turned against unfettered capitalism. However, not everybody believed that this had to mean a complete departure from a market-based economy. The young German economist and sociologist Alexander Rüstow certainly did not. In a speech he delivered in 1932, which is regarded as one of the founding documents of neoliberalism, he called for a ‘Third Way’ between socialism and capitalism. Rüstow’s speech was titled ‘Free Economy, Strong State,’ and in these four words he summed up the core of the neoliberal project. He rejected markets left to their own devices. Such markets, he was convinced, would always degenerate. ‘We agree with Marxists and socialists in the conviction that capitalism is untenable and needs to be overcome,’ Rüstow wrote in a later essay. If laissez faire and Adam Smith style liberalism were so bad according to Rüstow, would he then have preferred a planned economy? His answer was a resounding no. With the same rhetorical verve he used to condemn capitalism, he equally rejected the promises of socialism and communism. They were no viable economic systems, and they were also incompatible with democracy, freedom, and human dignity. All of this led Rüstow to call for a middle way between laissez faire and socialism, a ‘Third Way.’ ‘We should be happy,’ he wrote, ‘that we do not have to make a difficult choice between capitalism and communism, but that there is a Third Way.’ Ironically, it is the very same logic that makes today’s critics of neoliberalism claim that one no longer had to choose between Hayek and Brezhnev, as Prime Minister Rudd expressed it last year. Although contemporary supporters of a ‘Third Way’ claim to be fighting neoliberalism, to Rüstow this very same ‘Third Way’ was neoliberalism. He called it neoliberalism to differentiate it from earlier liberalism, for which Rüstow frequently used derogatory terms such as ‘vulgar liberalism.’ Rüstow wanted to break with this old liberal tradition to put a new liberalism in its place—hence the prefix ‘neo.’ It was the philosophy for the state setting and policing a regulatory framework without actually planning the economy. A group of German economists and lawyers continued to develop this neoliberal philosophy in the 1930s and 1940s. Some of them, like Rüstow himself, left Nazi Germany to work in exile. Others like Walter Eucken, a close friend of Rüstow, remained in Germany where they were under constant threat. The Protestant theologian Dietrich Bonhoeffer is well known to an Australian audience since Rudd had named him ‘without doubt, the man I admire most in the history of the twentieth century.’ Therefore it may be of some interest that Bonhoeffer, too, was connected to the German neoliberal movement. It was none other than Bonhoeffer who commissioned the neoliberal economists around Walter Eucken for a concept for both domestic and foreign policies in Germany after the end of National Socialism. When the assassination of Hitler on 20 July 1944 failed, parts of this memorandum were obtained by the Gestapo, and Bonhoeffer was executed for his involvement in these post-war plans. It may seem ironic that Rudd’s most admired man in recent history had sympathies for neoliberalism, when the same Rudd has subsequently denounced neoliberalism as an empty philosophy. The philosophy of neoliberalism was eventually implemented in West Germany’s ‘Social Market Economy.’ There it became the foundation of the country’s rapid economic growth after the war, the so-called ‘economic miracle.’ Neoliberalism is a far richer, more thoughtful concept than it is mostly perceived today. To those criticising neoliberalism today, the answer may well be just that: We need more of this kind of neoliberalism that sets a good framework for a free economy. What we would need less of is only the rhetorical abuse of neoliberalism for political purposes.

#### Democracy checks

**O’Kane, 1997** (“Modernity, the Holocaust, and politics”, Economy and Society, February, ebsco)

Chosen policies cannot be relegated to the position of immediate condition (Nazis in power) in the explanation of the Holocaust. Modern bureaucracy is not ‘intrinsically capable of genocidal action’ (Bauman 1989: 106). Centralized state coercion has no natural move to terror. In the explanation of modern genocides it is chosen policies which play the greatest part, whether in effecting bureaucratic secrecy, organizing forced labour, implementing a system of terror, harnessing science and technology or introducing extermination policies, as means and as ends. As Nazi Germany and Stalin’s USSR have shown, furthermore, those chosen policies of genocidal government turned away from and not towards modernity. The choosing of policies, however, is not independent of circumstances. An analysis of the history of each case plays an important part in explaining where and how genocidal governments come to power and analysis of political institutions and structures also helps towards an understanding of the factors which act as obstacles to modern genocide. But it is not just political factors which stand in the way of another Holocaust in modern society. Modern societies have not only pluralist democratic political systems but also economic pluralism where workers are free to change jobs and bargain wages and where independent firms, each with their own independent bureaucracies, exist in competition with state-controlled enterprises. In modern societies this economic pluralism both promotes and is served by the open scientific method. By ignoring competition and the capacity for people to move between organizations whether economic, political, scientific or social, Bauman overlooks crucial but also very ‘ordinary and common’ attributes of truly modern societies. It is these very ordinary and common attributes of modernity which stand in the way of modern genocides.

## 2nc framework

### 2nc overview

#### Predictable debate is key to test the arguments of the aff

James **Zappen** **2004** Professor of Language and Literature at Rensselaer Polytechnic Institute. “The Rebirth of Dialogue: Bakhtin, Socrates, and the Rhetorical Tradition,” p. 35-36.

Finally, Bakhtin describes the Socratic dialogue as a carnivalesque debate between opposing points of view, with a ritualistic crownings and decrownings of opponents. I call this Socratic form of debate a contesting of ideas to capture the double meaning of the Socratic debate as both a mutual testing of oneself and others and a contesting or challenging of others' ideas and their lives. Brickhouse and Smith explain that Socrates' testing of ideas and people is a mutual testing not only of others but also of himself: Socrates claims that he has been commanded by the god to examine himself as well as others; he claims that the unexamined life is not worth living; and, since he rarely submits to questioning himself, "it must be that in the process of examining others Socrates regards himself as examining his own life, too." Such a mutual testing of ideas provides the only claim to knowledge that Socrates can have: since neither he nor anyone else knows the real definitions of things, he cannot claim to have any knowledge of his own; since, however, he subjects his beliefs to repeated testing, he can claim to have that limited human knowledge supported by the "inductive evidence" of "previous elenctic examinations." This mutual testing of ideas and people is evident in the Laches and also appears in the Gorgias in Socrates' testing of his own belief that courage is inseparable from the other virtues and in his willingness to submit his belief and indeed his life to the ultimate test of divine judgment, in what Bakhtin calls a dialogue on the threshold. The contesting or challenging of others' ideas and their lives and their ritualistic crowning/decrowning is evident in the Gorgias in Soocrates' successive refutations and humiliations of Gorgias, Polus, and Callicles.

#### Decisionmaking skills gained from debate are key to problem solving in all facets of life—better form of pedagogy

**Steinberg & Freeley 8** \*Austin J. Freeley is a Boston based attorney who focuses on criminal, personal injury and civil rights law, AND \*\*David L. Steinberg , Lecturer of Communication Studies @ U Miami, Argumentation and Debate: Critical Thinking for Reasoned Decision Making pp. 9-10

If we assume it to be possible **without** recourse to violence to reach agreement on all the problems implied in the employment of the idea of justice we are granting the possibility of formulating an ideal of man and society, valid for all beings endowed with reason and accepted by what we have called elsewhere the universal audience.14

I think that the only discursive methods available to us stem from techniques that are not demonstrative—that is, conclusive and rational in the narrow sense of the term—but from argumentative techniques which are not conclusive but which may tend to demonstrate the reasonable character of the conceptions put forward. It is this recourse to the rational and reasonable for the realization of the ideal of universal communion that characterizes the age-long endeavor of all philosophies in their aspiration for a city of man in which violence may progressively give way to wisdom.13

Whenever an individual controls the dimensions of" a problem, he or she can solve the problem through a personal decision. For example, if the problem is whether to go to the basketball game tonight, if tickets are not too expensive and if transportation is available, the decision can be made individually. But if a friend's car is needed to get to the game, then that person's decision to furnish the transportation must be obtained.

Complex problems, too, are subject to individual decision making. American business offers many examples of small companies that grew into major corporations while still under the individual control of the founder. Some computer companies that began in the 1970s as one-person operations burgeoned into multimillion-dollar corporations with the original inventor still making all the major decisions. And some of the multibillion-dollar leveraged buyouts of the 1980s were put together by daring—some would say greedy—financiers who made the day-to-day and even hour-to-hour decisions individually.

When President George H. W. Bush launched Operation Desert Storm, when President Bill Clinton sent troops into Somalia and Haiti and authorized Operation Desert Fox, and when President George W. Bush authorized Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq, they each used different methods of decision making, but in each case the ultimate decision was an individual one. In fact, many government decisions can be made only by the president. As Walter Lippmann pointed out, debate is the only satisfactory way the exact issues can be decided:

A president, whoever he is, has to find a way of understanding the novel and changing issues which he must, under the Constitution, decide. Broadly speaking ... the president has two ways of making up his mind. The one is to turn to his subordinates—to his chiefs of staff and his cabinet officers and undersecretaries and the like—and to direct them to argue out the issues and to bring him an agreed decision…

The other way is to sit like a judge at a hearing where the issues to be decided are debated. After he has heard the debate, after he has examined the evidence, after he has heard the debaters cross-examine one another, after he has questioned them himself he makes his decision…

It is a much harder method in that it subjects the president to the stress of feeling the full impact of conflicting views, and then to the strain of making his decision, fully aware of how momentous it Is. But there is no other satisfactory way by which momentous and complex issues can be decided.16

John F. Kennedy used Cabinet sessions and National Security Council meetings to provide debate to illuminate diverse points of view, expose errors, and challenge assumptions before he reached decisions.17 As he gained experience in office, he placed greater emphasis on debate. One historian points out: "One reason for the difference between the Bay of Pigs and the missile crisis was that [the Bay of Pig\*] fiasco instructed Kennedy in the importance of uninhibited debate in advance of major decision."18 All presidents, to varying degrees, encourage debate among their advisors.

We may never be called on to render the final decision on great issues of national policy, but we are constantly concerned with decisions important to ourselves for which debate can be applied in similar ways. That is, this debate may take place in our minds as we weigh the pros and cons of the problem, or we may arrange for others to debate the problem for us. Because we all are increasingly involved in the decisions of the campus, community, and society in general, it is in our intelligent self-interest to reach these decisions through reasoned debate.

### A2 roleplaying/state bad

#### “State bad” isn't responsive—there's a debate to be had on every institutional question and foreclosing that with a priori ethical posturing is itself unethical

**Talisse 2005** – philosophy professor at Vanderbilt (Robert, Philosophy & Social Criticism, 31.4, “Deliberativist responses to activist challenges”) \*note: gendered language in this article refers to arguments made by two specific individuals in an article by Iris Young

The first two challenges are focused on the failure of existing political institutions and processes to satisfy the ideals of publicity, accountability, and inclusion (109) that are promoted by the deliberative democrat. First, the activist points to the exclusionary character of existing sites of deliberation, citing the prevalence of structural inequality and power (108). Second, he criticizes recent measures aimed at inclusion for falling ‘far short of providing opportunities for real voice for those less privileged in the social structures’ (112).

Insofar as the activist’s criticisms are aimed at the failure of existing institutions to live up to the deliberative ideal, they implicitly accept that ideal. Thus, as Young points out, the deliberativist can agree with the activist that current conditions fall short of the democratic ideal, and can accept the activist’s specific criticisms of the existing order (112). Again, they differ on the issue of means, not ends: the deliberativist holds that processes of continuing public discourse can reveal and remedy the shortcomings of existing institutions and practices whereas the activist doubts that rational discussion can persuade powerful social agents to adopt a more inclusive and democratic mode of politics (112). The deliberativist may further argue that even if the activist’s suspicions regarding the efficacy of political deliberation are granted, these suspicions are not in themselves sufficient grounds for rejecting deliberative democracy. Though not ideal, deliberation may still be the best option available for democracy.

### A2 oppression

#### supplanting dialogue to protest oppression leads to even worse forms of authority

**Morson 4**

http://www.flt.uae.ac.ma/elhirech/baktine/0521831059.pdf#page=331

Northwestern Professor, Prof. Morson's work ranges over a variety of areas: literary theory (especially narrative); the history of ideas, both Russian and European; a variety of literary genres (especially satire, utopia, and the novel); and his favorite writers -- Chekhov, Gogol, and, above all, Dostoevsky and Tolstoy. He is especially interested in the relation of literature to philosophy.

Bakhtin viewed the whole process of “ideological” (in the sense of ideas and values, however unsystematic) development as an endless dialogue. As teachers, we find it difficult to avoid a voice of authority, however much we may think of ours as the rebel’s voice, because our rebelliousness against society at large speaks in the authoritative voice of our subculture. We speak the language and thoughts of academic educators, even when we imagine we are speaking in no jargon at all, and that jargon, inaudible to us, sounds with all the overtones of authority to our students. We are so prone to think of ourselves as fighting oppression that it takes some work to realize that we ourselves may be felt as oppressive and overbearing, and that our own voice may provoke the same reactions that we feel when we hear an authoritative voice with which we disagree. So it is often helpful to think back on the great authoritative oppressors and reconstruct their self-image: helpful, but often painful. I remember, many years ago, when, as a recent student rebel and activist, I taught a course on “The Theme of the Rebel” and discovered, to my considerable chagrin, that many of the great rebels of history were the very same people as the great oppressors. There is a famous exchange between Erasmus and Luther, who hoped to bring the great Dutch humanist over to the Reformation, but Erasmus kept asking Luther how he could be so certain of so many doctrinal points. We must accept a few things to be Christians at all, Erasmus wrote, but surely beyond that there must be room for us highly fallible beings to disagree. Luther would have none of such tentativeness. He knew, he was sure. The Protestant rebels were, for a while, far more intolerant than their orthodox opponents. Often enough, the oppressors are the ones who present themselves and really think of themselves as liberators. Certainty that one knows the root cause of evil: isn’t that itself often the root cause? We know from Tsar Ivan the Terrible’s letters denouncing Prince Kurbsky, a general who escaped to Poland, that Ivan saw himself as someone who had been oppressed by noblemen as a child and pictured himself as the great rebel against traditional authority when he killed masses of people or destroyed whole towns. There is something in the nature of maximal rebellion against authority that produces ever greater intolerance, unless one is very careful. For the **skills** of fighting or refuting an oppressive power are not those of openness, self-skepticism, or real **dialogue**. In preparing for my course, I remember my dismay at reading Hitler’s Mein Kampf and discovering that his self-consciousness was precisely that of the rebel speaking in the name of oppressed Germans, and that much of his amazing appeal – otherwise so inexplicable – was to the German sense that they were rebelling victims. In our time, the Serbian Communist and nationalist leader Slobodan Milosevic exploited much the same appeal. Bakhtin surely knew that Communist totalitarianism, the Gulag, and the unprecedented censorship were constructed by rebels who had come to power. His favorite writer, Dostoevsky, used to emphasize that the worst oppression comes from those who, with the rebellious psychology of “the insulted and humiliated,” have seized power – unless they have somehow cultivated the value of dialogue, as Lenin surely had not, but which Eva, in the essay by Knoeller about teaching The Autobiography of Malcolm X, surely had. Rebels often make the worst tyrants because their word, the voice they hear in their consciousness, has borrowed something crucial from the authoritative word it opposed, and perhaps exaggerated it: the aura of righteous authority. If one’s ideological becoming is understood as a struggle in which one has at last achieved the truth, one is likely to want to impose that truth with maximal authority; and rebels of the next generation may proceed in much the same way, in an ongoing spiral of intolerance.

### micropolitics bad

#### Highlighting individual resistance and identity atomizes protest at the expense of cross-cultural communication and engaging those who disagree. Their interpretation of activism exaggerates the role of discourse and prevents any responsibility for achieving goals

**Chandler, 7** David, Professor of History, The possibilities of post-territorial political community, Area, Volume 39, Issue 1, pages 116–119, Marc

For radical activists – exemplified in the anti-Globalization/Capitalism/War social protests – it would appear that there has been a profound shift away from the politics of parties and collective movements to a much more atomized and individuated form of protest. This was highlighted in the February 2003 anti-Iraq war protest demonstrations which attracted more people than any previous political protests, but which markedly did not produce an anti-war ‘movement’. There was no attempt to win people engaged to a shared position; people expressed disparate and highly personal protests of disengagement, such as the key slogan of ‘Not in My Name’.

Being ‘anti-war’ is today an expression of personal ethics rather than of political engagement and does not indicate that the individual concerned is engaged in a campaign of social change or is interested in either understanding or debating the causes of war (capitalism, human nature, etc.). These forms of practical and intellectual engagement with a political community are only relevant if the desire to end war is understood as a practical or instrumental one.

Similarly, the anti-Globalization protests and collective comings together in World and European Social Forums are not aimed at producing a collective movement but at sharing the feelings and respecting the identities of various groupings involved (Klein 2002;Kingsnorth 2004). The fact that large numbers of people are engaged in these forms of radical protest is in marked contrast to their political impact. The fact that they appeal to the disengaged is their attractive factor, the inability to challenge this disengagement leads to the lack of political consequences.

One of the most individuated expressions of symbolic politics which puts personal ethics above those of a collective engagement is the desire of radical activists to make individual journeys of self-discovery to the conflict areas of the West Bank, Chiapas, Bosnia or Iraq, as humanitarian or aid workers or as ‘human shields’, where they are willing to expose themselves to death or injury as a personal protest against the perceived injustices of the world.

Here the ethics lie in the action or personal sacrifice, rather than in any instrumental consequences. This is the politics of symbolism of personal statement, a politics of individual ethics which, through the ability to travel, becomes immediately global in form as well as in content. There is no desire to engage with people from their own country of origin, in fact, this activism is often accompanied by a dismissal of the formal political process, and by implication the views of those trapped in the state-based politics of the ‘self-satisfied West’ (O’Keefe 2002; Chandler 2003).

AI Qaeda

The desire to take part in martyrdom operations in the cause of the global jihad is representative of the unmediated political action which immediately makes the personal act a global political one. The jihad is a break from the politics of Islamic fundamentalism, in the same way as radical global activism breaks from the traditional politics of the Left and is founded on its historical defeat. The jihad is not concerned with political parties, revolutions or the founding of ideological states (Roy 2004). Al Qaeda's politics are those of the imaginary global space of the ummah making the personal act global in its effects. It is the marginalization and limited means of Al Qaeda that makes its struggle an immediately global one, similar to the marginal and limited struggle of, for example, the Mumbai slum dwellers or the Zapatistas. This marginalization means that their actions lack any instrumentality – i.e. the consequences or responses to their actions are entirely out of their control (Devji 2005).

Where intentionality and instrumentality were central to collective political projects aimed at political ends, martyrdom operations in the West are purely ethical acts – this is gesture politics or the politics of symbolism at its most pure. Al Qaeda has no coherent political programme, shared religious faith or formal organizational framework. The act of martyrdom is the only action for which Al Qaeda claims full responsibility, the autonomy of the self in self-destruction makes the most fully individual act also the most immediately global, in its indiscriminate claim on the viewing public of the global sphere. Martyrdom also reflects other new political trends of the politics of global ethics mentioned above. Those involved need no engagement with political or religious learning, nor any engagement with an external audience, nor relationship with any external reality. The act of martyrdom is in-itself evidence of the highest ethical commitment, the act serves as its own proof and justification, its own final end.

To what extent can we speak of post-territorial political communities?

This disjunction between the human/ethical/global causes of post-territorial political activism and the capacity to ‘make a difference’ is what makes these individuated claims immediately abstract and metaphysical – there is no specific demand or programme or attempt to build a collective project. This is the politics of symbolism. The rise of symbolic activism is highlighted in the increasingly popular framework of ‘raising awareness’– here **there is no longer even a formal connection between ethical activity and intended outcomes** (Pupavac 2006). Raising awareness about issues has replaced even the pretence of taking responsibility for engaging with the world – the act is ethical in-itself. Probably the most high profile example of awareness raising is the shift from Live Aid, which at least attempted to measure its consequences in fund-raising terms, to Live 8 whose goal was solely that of raising an ‘awareness of poverty’. The struggle for ‘awareness’ makes it clear that the focus of symbolic politics is the individual and their desire to elaborate upon their identity – to make us aware of their ‘awareness’, rather than to engage us in an instrumental project of changing or engaging with the outside world.

It would appear that in freeing politics from the constraints of territorial political community there is a danger that political activity is freed from any constraints of social mediation (see further, Chandler 2004a). **Without being forced to test and hone our arguments, or even to clearly articulate them, we can rest on the radical ‘incommunicability’ of our personal identities and claims – you are ‘either with us or against us’; engaging with those who disagree is no longer possible or even desirable.**

**It is this lack of desire to engage which most distinguishes the unmediated activism of post-territorial political actors from the old politics of territorial communities**, founded on struggles of collective interests (Chandler 2004b). The clearest example is old representational politics – this forced engagement in order to win the votes of people necessary for political parties to assume political power. Individuals with a belief in a collective programme knocked on strangers’ doors and were willing to engage with them, not on the basis of personal feelings but on what they understood were their potential shared interests. Few people would engage in this type of campaigning today; engaging with people who do not share our views, in an attempt to change their minds, is increasingly anathema and most people would rather share their individual vulnerabilities or express their identities in protest than attempt to argue with a peer.

This paper is not intended to be a nostalgic paean to the old world of collective subjects and national interests or a call for a revival of territorial state-based politics or even to reject global aspirations: quite the reverse. Today, politics has been ‘freed’ from the constraints of territorial political community – governments without coherent policy programmes do not face the constraints of failure or the constraints of the electorate in any meaningful way; activists, without any collective opposition to relate to, are free to choose their causes and ethical identities; protest, from Al Qaeda, to anti-war demonstrations, to the riots in France, is inchoate and atomized. When attempts are made to formally organize opposition, the ephemeral and incoherent character of protest is immediately apparent.

The decline of territorial political community does not appear to have led to new forms of political community (in territorial or post-territorial forms), but rather to the individuation of ‘being’ political. Therefore ‘being political’ today takes the form of individuated ethical activity in the same way as ‘being religious’ takes a highly personal form with the rejection of organized churches. Being religious and being political are both statements of individual differentiation rather than reflections of social practices and ways of life. One can not ‘be’ political (anymore than one can ‘be’ religious) except by elaborating a personal creed or identity – being political or religious today is more likely to distance one from one's community, or at least to reflect that perception of distance. **The elaboration of our individual ‘being’, of our identity, signifies the breakdown of community and the organic ties of the traditional social/political sphere.**

### A2 mitchell

#### Mitchell now agrees that switch-side policy debate is superior – debate should be protected space for students to take imaginary positions that go against their convictions

**Mitchell, 02** (11/9/02, Gordon, “[eDebate] Adri and Ross,” http://www.ndtceda.com/pipermail/edebate/2002-November/044264.html)

Politically I have moved quite a bit since 1998, when I wrote that debate institutions should pay more attention to argumentative agency, i.e. cultivation of skills that facilitate translation of critical thinking, public speaking, and research acumen into concrete exemplars of democratic empowerment. Back then I was highly skeptical of the "laboratory model" of "preparatory pedagogy," where students were kept, by fiat, in the proverbial pedagogical bullpen.

Now I respect much more the value of a protected space where young people can experiment politically by taking imaginary positions, driving the hueristic process by arguing against their convictions. In fact, the integrity of this space could be compromised by "activist turn" initiatives designed to bridge contest round advocacy with political activism.

These days I have much more confidence in the importance and necessity of switch-side debating, and the heuristic value for debaters of arguing against their convictions. I think fashioning competitive debate contest rounds as isolated and politically protected safe spaces for communicative experimentation makes sense. However, I worry that a narrow diet of competitive contest round debating could starve students of opportunities to experience the rich political valence of their debating activities.

## 1nr nature k

### overview

#### THE QRITIQ TURNS CASE – the affirmative’s effort to restore the lost state of balance is a suicidal narrative that assumes we must sacrifice ourselves for a nature we really don’t have ANY control over

**CRONON ‘96** [William; Frederick Jackson Turner Professor of History, Geography, and Environmental Studies at the University of Wisconsin at Madison; Uncommon Ground; 1996; p. 82-83]

But such a perspective is possible only if we accept the wilderness premise that nature, to be natural, must also be pristine—remote from humanity and untouched by our common past. In fact, everything we know about environmental history suggests that people have been manipulating the natural world on various scales for as long as we have a record of their passing. Moreover, we have unassailable evidence that many of **the environmental changes we now face also occurred quite apart from human intervention at one time or another in the earth's past.**31 **The point is not that our current problems are trivial, or that our devastating effects on the earth's ecosystems should be accepted as inevitable or "natural." It is rather that we seem unlikely to make much progress in solving these problems if we hold up to ourselves as the mirror of nature a wilderness we ourselves cannot inhabit. To do so is merely to take to a logical extreme the paradox that was built into wilderness from the beginning: if nature dies because we enter it, then the only way to save nature is to kill ourselves. The absurdity of this proposition flows from the underlying dualism it expresses. Not only does it ascribe greater power to humanity than we in fact possess**—physical and biological nature will surely survive in some form or another long after we ourselves have gone the way of all flesh—**but in the end it offers us little more than a self-defeating counsel of despair. The tautology gives us no way out: if wild nature is the only thing worth saving, and if our mere presence destroys it, then the sole solution to our own unnaturalness, the only way to protect sacred wilderness from profane humanity, would seem to be sui-cide. It is not a proposition that seems likely to produce very positive or practical results.**

## 1nr cap

### A2 perm

#### Cooption - Trade off -- Aff understates importance of capital and focuses attention on meaningless struggles that prop up the status quo – Trade off -- Aff understates importance of capital and focuses attention on meaningless struggles that prop up the status quo

Smith ‘94

(Sharon, columnist for Socialist Worker and author of Women’s Liberation and Socialism, Mistaken Identity: or Can Identity Politics Liberate the Oppressed, <http://pubs.socialistreviewindex.org.uk/isj62/smith.htm>)

Following this logic, the struggles against exploitation and oppression do not correspond. Within the politics of identity notions of radicalism and class politics more often than not are mutually exclusive. In practice this has meant replacing class politics with a politics of cross class alliances, and a strategy based upon 'direct action' tactics – attention getting actions carried out by the enlightened few, the aim being to shock and disturb the ignorant masses. In the US the very names of some organizations reflect this aim – Queer Nation, the Lesbian Avengers, YELL, and Random Pissed Off Women. Some of these groups, along with more conventionally named organizations, such as the Women's Action Coalition (WAC), use a variety of direct action tactics. Often these actions resemble guerilla theatre more than anything else. Queer Nation, for example, has been known for its lesbian and gay 'kiss-ins', while WAC members sometimes remove their shirts as a way of getting attention. Sometimes these actions can seem quite radical – even a bit over the top. For example, as one of its first activities New York WAC protested at the opening of the new Guggenheim museum because of its 'racism, sexism, classism, ageism, Eurocentrism, nepotism, elitism, phallocentrism, and homophobia'.2 But beneath a bold veneer the program is often standard liberalism. Thus at a Chicago WAC meeting in the autumn of 1992 members vowed defiantly to fight for 'patriarchal demolition', yet most adopted tacit support for the Democratic presidential candidate, Bill Clinton. Within these milieux it is currently in vogue to dismiss any attempt to draw a causal connection between economics and politics, or between class society and oppression, as mechanical economic determinism, or 'reductionism'. And although undoubtedly many, if not most, of those active around identity politics are unaware of its theoretical underpinnings, it is heavily influenced by the particular offshoot of postmodernism3 calling itself 'post-Marxism', for which the explicit rejection of the centrality of class is something of an obsession

#### Autonomy – aff’s focus on individualism obscures the commonality of workers movements making coalition –building impossible. The impact to this outweighs the aff.

Smith ‘94

(Sharon, columnist for Socialist Worker and author of Women’s Liberation and Socialism, Mistaken Identity: or Can Identity Politics Liberate the Oppressed, <http://pubs.socialistreviewindex.org.uk/isj62/smith.htm>)

In the context of oppression the demand for 'autonomy' entails a deep sense of pessimism about the possibility of the working class movement fighting for the interests of all workers, and for all who suffer oppression in society. In the framework of identity politics, it involves a pessimism about the possibility for building solidarity even amongst the oppressed. Yet, as experience has shown, elevating the notion of autonomy to a principle, as identity politics does, makes it virtually impossible to build the kind of movement which can end oppression. Class provides the only unifying basis for fighting against oppression. Only a movement organized on the basis of genuine solidarity between all who are exploited and oppressed by capitalism, under the leadership of the working class, holds the potential to wipe out oppression in all its forms. The Marxist view is that the working class cannot hope to win a socialist society unless the working class movement is united on the basis of ending all forms of oppression and exploitation. Thus it is in workers' objective interests to fight oppression in all its forms.

#### Reformism – Their attempt to circumscribe political change within the realm of the “possible” confines the perm to the status quo and is incorporated into the smooth functioning of capitalism

Slavoj **Zizek**, Senior Researcher at the University of Ljubljana, Repeating Lenin <http://www.marxists.org/reference/subject/philosophy/works/ot/zizek1.htm> 19**99**

Today, we already can discern the signs of a kind of general unease — recall the series of events usually listed under the name of “Seattle.” The 10 years honeymoon of the triumphant global capitalism is over, the long-overdue “seven years itch” is here — witness the panicky reactions of the big media, which — from the Time magazine to CNN — all of a sudden started to warn about the Marxists manipulating the crowd of the “honest” protesters. The problem is now the strictly Leninist one — how to ACTUALIZE the media’s accusations: how to invent the organizational structure which will confer on this unrest the FORM of the universal political demand. Otherwise, the momentum will be lost, and what will remain is the marginal disturbance, perhaps organized as a new Greenpeace, with certain efficiency, but also strictly limited goals, marketing strategy, etc. In other words, the key “Leninist” lesson today is: politics without the organizational FORM of the [party](http://www.marxists.org/glossary/terms/p/o.htm#political-party) is politics without politics, so the answer to those who want just the (quite adequately named) “[New SOCIAL Movements](http://www.marxists.org/glossary/terms/s/o.htm#social-movement)” is the same as the answer of the Jacobins to the Girondin compromisers: “You want revolution without a revolution!” Today’s blockade is that there are two ways open for the socio-political engagement: either play the game of the system, engage in the “long march through the institutions,” or get active in new social movements, from feminism through ecology to anti-racism. And, again, the limit of these movements is that they are not POLITICAL in the sense of the Universal Singular: they are “one issue movements” which lack the dimension of the universality, i.e. they do not relate to the social TOTALITY. Here, Lenin’s reproach to liberals is crucial: they only EXPLOIT the working classes’ discontent to strengthen their position vis-a-vis the conservatives, instead of identifying with it to the end.[52](http://www.marxists.org/reference/subject/philosophy/works/ot/zizek1.htm#52) Is this also not the case with today’s Left liberals? They like to evoke racism, ecology, workers’ grievances, etc., to score points over the conservatives WITHOUT ENDANGERING THE SYSTEM. Recall how, in Seattle, Bill Clinton himself deftly referred to the protesters on the streets outside, reminding the gathered leaders inside the guarded palaces that they should listen to the message of the demonstrators (the message which, of course, Clinton interpreted, depriving it of its subversive sting attributed to the dangerous extremists introducing chaos and violence into the majority of peaceful protesters). It’s the same with all New Social Movements, up to the Zapatistas in Chiapas: the systemic politics is always ready to “listen to their demands,” depriving them of their proper political sting. The system is by definition ecumenical, open, tolerant, ready to “listen” to all — even if one insist on one’s demands, they are deprived of their universal political sting by the very form of negotiation. The true Third Way we have to look for is this third way between the institutionalized parliamentary politics and the new social movements. The ultimate answer to the reproach that the radical Left proposals are utopian should thus be that, today, the true utopia is the belief that the present liberal-democratic capitalist consensus could go on indefinitely, without radical changes. We are thus back at the old ‘68 motto “Soyons realistes, demandons l'impossible!": in order to be truly a “realist,” one must consider breaking out of the constraints of what appears “possible” (or, as we usually out it, “feasible”)

# Round 5 – Neg v Iowa DH

## 1nc

### 1nc t

#### Interpretation – Financial incentives must be positively linked to rewards – they cannot be negative

Harris, 89 – professor of law at the University of Illinois (Fred, 49 La. L. Rev. 1315 (1988-1989) “Automobile Emissions Control Inspection and Maintenance Program: Making It More Palatable to Coerced Participants”, Hein Online)

53. The term "incentives," for purposes of this Article, means those devices that induce one into doing something because of the prospect of reward and, therefore, engender a positive feeling within the actor. An example of incentives in this sense would be tax incentives like credits and/or deductions. But it appears that Congress, some courts and a few commentators have taken a broader view of incentives and have categorized items such as extensions to compliance deadlines and, most notably, sanctions in the Act-denials of federal grants and bans on construction in the event of noncompliance-as incentives to compliance. To be sure, these latter items may induce compliance but surely not because of the extension of a "carrot." Instead, they epitomize the "stick" or "disincentive" approach to behavioral modification.

#### financial incentives’ precludes direct purchases from the government

Edward W. Nelson et al (M.D., former Chairman of the OPTN/UNOS Ethics Committee, James E. Childress, Ph.D. Jennie Perryman, R.N., M.S.N. Victor Robards, M.D. Albert Rowan Michael S. Seely, R.N., B.S.N. Sylvester Sterioff, M.D. Mary Rovelli Swanson, R.N., M.B.A.) 1993 “Financial Incentives for Organ Donation” http://optn.transplant.hrsa.gov/resources/bioethics.asp?index=4

A definition of terms is necessary prior to a discussion of the concept of financial incentives for organ donation. First, financial incentives, as discussed here, do not mean additional monies spent for public or professional education or recognition and counseling of organ donor families. Because the concept of financial incentives fundamentally changes the process of organ procurement, it has been argued that the term "donor" is no longer applicable and would need to be replaced by a term such as 'vendor." The term "rewarded gifting" has been suggested and has been justly criticized as an oxymoron by those opposed to financial incentives and a despicable euphemism by those who promote this concept. Of greatest practical significance is the distinction between "incentive" and "payment" since a system of financial incentives may indeed be a viable option if, as interpreted by law, "incentives" do not amount to "purchases" and "donors" are therefore not transformed into 'vendors."

#### Violation – the aff mechanism imposes requirements that result in a financial incentive

#### That’s a voter

#### Limits – makes the topic bidirectional – allows imposition of requirements on one energy source in order to incentivize another – explodes research because the list of negative incentives is massive

#### Ground – predictable negative offense is limited to direct incentives for each energy source – allowing negative incentives arbitrarily give the aff unpredictable spin on core generics like politics and energy trade off disads.

### 1NC Elections

#### Obama is winning but it’s very close

**Blumenthal, 10/25/12** - Mark Blumenthal is the senior polling editor of the Huffington Post and the founding editor of Pollster.com.Mark Blumenthal is the senior polling editor of the Huffington Post and the founding editor of Pollster.com (“Presidential Polls Counter Romney Surge Myth” Huffington Post, http://www.huffingtonpost.com/2012/10/25/presidential-polls-romney-surge\_n\_2016066.html

Collectively, the new polls of the past 24 hours have done nothing to change the standings in the most crucial battleground states. Obama continued to hold leads of 2 to 3 percentage points in Ohio, Iowa, Nevada and Wisconsin, four states that currently combine with the states where Obama leads by larger margins to create a 277 electoral vote majority, seven more than the 270 needed to win.

Romney continues to lead in North Carolina and retain a narrow edge in Florida, states that would net him 233 electoral votes along with other states where Romney leads by larger margins. Those totals leave 26 electoral votes up for grabs in New Hampshire, Colorado and Virginia, states where the tracking model shows Obama leading by very narrow margins of 2 percentage points or less.

Collectively, the trends of the past week provide a reality check to two myths that have emerged in recent campaign coverage.

The first is that Romney has been "surging" since the first debate. While the debate certainly boosted Romney's standing in the polls, trends over the past two weeks have been negligible, with the leader seesawing nationally within a range of roughly one percentage point. Over the same period, the standings within the key battleground states have also remained constant. Other poll tracking models have shown the same patterns.

#### New clean energy promotion swings the election by making Romney’s energy narrative resonate

**Levine, 12** - Steve LeVine is the author of The Oil and the Glory and a longtime foreign correspondent (“How dirty is Romney prepared to get to win election?” 6/13,

http://oilandglory.foreignpolicy.com/posts/2012/06/12/how\_dirty\_is\_romney\_prepared\_to\_get\_to\_win\_election)

Is Barack Obama sufficiently dirty to win re-election? Not according to presumptive Republican nominee Mitt Romney, who says the president is too spic and span. Calculating that clean energy is passé among Americans more concerned about jobs and their own pocketbooks, Romney is gambling that he can tip swing voters his way by embracing dirtier air and water if the tradeoff is more employment and economic growth. Romney's gamble is essentially a bet on the demonstrated disruptive potency of shale gas and shale oil, which over the last year or so have shaken up geopolitics from Russia to the Middle East and China. Now, Romney and the GOP leadership hope they will have the same impact on U.S. domestic politics, and sweep the former Massachusetts governor into the White House with a strong Republican majority in Congress. A flood of new oil and natural gas production in states such as North Dakota, Ohio, Pennsylvania, and Texas is changing the national and global economies. U.S. oil production is projected to reach 6.3 million barrels a day this year, the highest volume since 1997, the Energy Information Agency reported Tuesday. In a decade or so, U.S. oil supplies could help to shrink OPEC's influence as a global economic force. Meanwhile, a glut of cheap U.S. shale gas has challenged Russia's economic power in Europe and is contributing to a revolution in how the world powers itself. But Romney and the GOP assert that Obama is slowing the larger potential of the deluge, and is not up to the task of turning it into what they say ought to be a gigantic jobs machine. The president's critics say an unfettered fossil fuels industry could produce 1.4 million new jobs by 2030. They believe that American voters won't be too impressed with Obama's argument that he is leading a balanced energy-and-jobs approach that includes renewable fuels and electric cars. The GOP's oil-and-jobs campaign -- in April alone, 81 percent of U.S. political ads attacking Obama were on the subject of energy, according to Kantar Media, a firm that tracks political advertising -- is a risk that could backfire. Americans could decide that they prefer clean energy after all. Or, as half a dozen election analysts and political science professors told me, energy -- even if it seems crucial at this moment in time -- may not be a central election issue by November. Yet if the election is as close as the polls suggest, the energy ads could prove a pivotal factor. "Advertising is generally not decisive. Advertising matters at the margins. ... But ask Al Gore if the margin matters," said Ken Goldstein, president of the Campaign Media Analysis Group at Kantar Media. "This is looking like an election where the margin may matter." Romney is hardly the first major U.S. presidential candidate to embrace Big Oil. The politics of clean go back to Lady Bird Johnson's war on litter and Richard Nixon's embrace of environmentalism. But both presidents Bush came from the oil industry, and former Alaska Gov. Sarah Palin, the last GOP vice presidential nominee, gleefully led chants of "Drill, baby, drill" in 2008. Yet President George W. Bush also famously declared that "America is addicted to oil" in his 2006 State of the Union address, and initiated most of the energy programs for which Obama is currently under fire. And Palin's drumbeat in the end seemed to fall flat. The Republican efforts appear to go beyond any modern campaign in their brash embrace of what is dirty, and their scorn of what is not. And the times seem to favor them. In 2009, the GOP, backed by heavy industry lobbying, knocked back environmentalists on their heels by crushing global warming legislation. Other previously central issues -- Afghanistan, Iraq, health care -- are still debated in the campaign, but not as centrally nor as viscerally as energy, said Frank Maisano, an energy and political analyst at Bracewell & Giuliani, a Houston-based law firm.

#### Energy is key

**Levine, 12** - Steve LeVine is the author of The Oil and the Glory and a longtime foreign correspondent (“How dirty is Romney prepared to get to win election?” 6/13,

http://oilandglory.foreignpolicy.com/posts/2012/06/12/how\_dirty\_is\_romney\_prepared\_to\_get\_to\_win\_election)

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#### Romney win would crush US-Russian relations and Central Asian stability

Mark Adomanis, 4-17-2012; analyst for Forbes, Mitt Romney's Incoherent Russia Policy http://www.forbes.com/sites/markadomanis/2012/04/17/mitt-romneys-incoherent-russia-policy/

According to his campaign’s own words, Romney will basically ignore Central Asian authoritarianism, which literally everyone agrees is far nastier, more brutal, and more open than anything the Russians are guilty of, while simultaneously focusing on democracy promotion and regime change in Russia. That is to say Romney’s Russia policy will, to a large extent, be based on relentlessly confronting the Kremlin. But won’t the Kremlin react extremely poorly to an American policy that seeks not only to co-opt its longtime allies in Central Asia and but to depose the current regime? According to Romney, the answer is no: the Kremlin will be so impressed by the bravery and willpower of this American effort that it will more actively support American goals (though precisely why it would react positively to an open challenge to its authority is left unsaid). Despite the endless accusations of Obama’s “double standards” and his “moral relativism” Romney is quite openly embracing his own set of double-standards. As the campaign’s website itself says, one set of moral values will be applied to the Central Asians while a completely different, and much more exacting, set of values will be applied to the Russians. It goes almost without saying that this is the sort of bad-faith posturing that really drives the Russians batty and that they react very poorly to this sort of thing. While I personally am of a strongly realist orientation, and have little patience for the attempt to inject “values” into an international system that naturally tends to be amoral and anarchic, I understand that there is a coherent case to be made for the neoconservative position. Very intelligent people, including many of my friends and acquaintances, hold views similar to the ones Romney espouses towards, and while I can’t say I find them convincing I’m not nearly egotistical enough to think that my own views are the only “correct” ones. However Romney’s mix-and-match approach, a dollop of realism here, a large dose of neoconservatism there, a dash of accommodation here and a big helping of confrontation there, will not be a sober-minded attempt to appeal to everyone, but will instead be a disjointed mess that will simultaneously alienate and antagonize almost everyone in the region. While the foreign policy of any American president will never be perfectly within the bounds of a single school of thought, Romney’s entire Russia policy is a case study in avoiding hard choices. It quite openly attempts to be all things to all people: realists can look at it and see parts of their ideology, and neoconservatives can look at it and see parts of their ideology too. Romney will both openly confront the Russians and get more concessions from them, support democracy and work hand-in-hand with some of the world’s most repressive regimes, pursue missile defense and get Russian cooperation on Afghanistan, expand NATO and convince Russia to stop arming Syria, work to undermine Russia’s energy interests and get it to isolate Iran. There are no hard choices, no nasty compromises, and no trade-offs between values and interests: there is just the unapologetic exercise of American power and the positive consequences inevitably associated with it. Obama is himself very(!) far from being perfect, but at least his foreign policy seems to be a reasonably coherent attempt to advance America’s interests while avoiding, to the greatest extent possible, needless antagonism. As far as I can tell Romney’s main position is that Obama is bad, that everything he’s done is bad too, and that Romney would do better because… he said he will that’s why! There’s a deeper lesson in there about how this campaign is going to be waged, and a rather troubling one at that.

#### Russian relations prevent global nuclear war and terrorism and Iran crisis

**NTI 9** [Global Security Newswire, “Russia Open to U.S. Suggestions on Improving Relations, Curbing Iran” http://www.globalsecuritynewswire.org/gsn/nw\_20090318\_4374.php 3/19]

Russian leaders have shown an interest in improving ... outcome," the report adds (Nixon Center release, March 16).

Russian leaders have shown an interest in improving relations with Washington, a thaw that could enable the two former Cold War rivals to cooperate more closely on efforts to curb Iran's nuclear ambitions, the Washington Post reported today (see GSN, March 16).

The two nations experienced growing tensions during the Bush administration as they disagreed over a variety of international security issues, particularly a U.S. plan to deploy missile defenses in Eastern Europe as a hedge against potential Iranian missile threats. Regarding Iran, Russia has cautiously supported some U.N. Security Council resolutions setting mild sanctions against Iran for its refusal to freeze its uranium enrichment program, but Moscow scuttled U.S. efforts last year to boost those penalties.

Trying to change the climate, U.S. President Barack Obama has sent his counterpart a letter seeking a packaged solution to U.S.-Russian disputes, and Moscow appears interested, according to some analysts and officials.

Russian officials "want to send a message to the Obama administration that they're prepared to have a new relationship, but it will have to be quid pro quo," said Dmitri Simes, president of the Washington-based Nixon Center. "If they have to sacrifice their special relationship with Iran, they want to see a change in their relationship with the United States" (Pan/DeYoung, Washington Post, March 18).

Simes directed a commission that called on the Obama administration this week to recognize the importance of good Russian relations to a breadth of international issues, including the Iranian nuclear crisis.

"Without deep Russian cooperation, **no strategy is likely to succeed** in preventing the proliferation of nuclear weapons, **nuclear terrorism and nuclear war,"** says the commission report. "Working with Moscow to solve the Iran problem, including possibly strengthening sanctions on Iran if necessary, should be a top U.S. priority."

"However, America is unlikely to be able to resolve the Iranian nuclear issue solely through sanctions, and Russia's cooperation could contribute substantially to a successful outcome," the report adds (Nixon Center release, March 16).

#### Romney causes massive foreign backlash and nuclear wars around the globe

Doug Bandow 5-15-2012; Doug Bandow is a senior fellow at the Cato Institute and former special assistant to President Ronald Reagan. “Mitt Romney: The Foreign Policy of Know-Nothingism” http://www.cato.org/publications/commentary/mitt-romney-foreign-policy-knownothingism

Romney’s overall theme is American exceptionalism and greatness, slogans that win public applause but offer no guidance for a bankrupt superpower that has squandered its international credibility. “This century must be an American century,” Romney proclaimed. “In an American century, America leads the free world and the free world leads the entire world.” He has chosen a mix of advisers, including the usual neocons and uber-hawks — Robert Kagan, Eliot Cohen, Jim Talent, Walid Phares, Kim Holmes, and Daniel Senor, for instance — that gives little reason for comfort. Their involvement suggests Romney’s general commitment to an imperial foreign policy and force structure. Romney is no fool, but he has never demonstrated much interest in international affairs. He brings to mind George W. Bush, who appeared to be largely ignorant of the nations he was invading. Romney may be temperamentally less likely to combine recklessness with hubris, but he would have just as strong an incentive to use foreign aggression to win conservative acquiescence to domestic compromise. This tactic worked well for Bush, whose spendthrift policies received surprisingly little criticism on the right from activists busy defending his war-happy foreign policy. The former Massachusetts governor has criticized President Obama for “a naked political calculation or simply sheer ineptitude” in following George W. Bush’s withdrawal timetable in Iraq and for not overriding the decision of a government whose independence Washington claims to respect. But why would any American policymaker want to keep troops in a nation that is becoming ever more authoritarian, corrupt, and sectarian? It is precisely the sort of place U.S. forces should not be tied down. In contrast, Romney has effectively taken no position on Afghanistan. At times he appears to support the Obama timetable for reducing troop levels, but he has also proclaimed that “Withdrawal of U.S. forces from Afghanistan under a Romney administration will be based on conditions on the ground as assessed by our military commanders.” Indeed, he insisted: “To defeat the insurgency in Afghanistan, the United States will need the cooperation of both the Afghan and Pakistani governments — we will only persuade Afghanistan and Pakistan to be resolute if they are convinced that the United States will itself be resolute,” and added, “We should not negotiate with the Taliban. We should defeat the Taliban.” Yet it’s the job of the president, not the military, to decide the basic policy question: why is the U.S. spending blood and treasure trying to create a Western-style nation state in Central Asia a decade after 9/11? And how long is he prepared to stay — forever? On my two trips to Afghanistan I found little support among Afghans for their own government, which is characterized by gross incompetence and corruption. Even if the Western allies succeed in creating a large local security force, will it fight for the thieves in Kabul? Pakistan is already resolute — in opposing U.S. policy on the ground. Afghans forthrightly view Islamabad as an enemy. Unfortunately, continuing the war probably is the most effective way to destabilize nuclear-armed Pakistan. What will Romney do if the U.S. military tells him that American combat forces must remain in Afghanistan for another decade or two in order to “win”? The ongoing AfPak conflict is not enough; Romney appears to desire war with Iran as well. No one wants a nuclear Iran, but Persian nuclear ambitiions began under America’s ally the Shah, and there is no reason to believe that the U.S. (and Israel) cannot deter Tehran. True, Richard Grenell, who briefly served as Romney’s foreign-policy spokesman, once made the astonishing claim that the Iranians “will surely use” nuclear weapons. Alas, he never shared his apparently secret intelligence about the leadership in Tehran’s suicidal tendencies. The Iranian government’s behavior has been rational even if brutal, and officials busy maneuvering for power and wealth do not seem eager to enter the great beyond. Washington uneasily but effectively deterred Joseph Stalin and Mao Zedong, the two most prolific mass murderers in history. Iran is no substitute for them. Romney has engaged in almost infantile ridicule of the Obama administration’s attempt to engage Tehran. Yet the U.S. had diplomatic relations with Hitler’s Germany and Stalin’s Russia. Washington came to regret not having similar contact with Mao’s China. Even the Bush administration eventually decided that ignoring Kim Jong-Il’s North Korea only encouraged it to build more nuclear weapons faster. Regarding Iran, Romney asserted, “a military option to deal with their nuclear program remains on the table.” Building up U.S. military forces “will send an unequivocal signal to Iran that the United States, acting in concert with allies, will never permit Iran to obtain nuclear weapons... Only when the ayatollahs no longer have doubts about America’s resolve will they abandon their nuclear ambitions.” Indeed, “if all else fails... then of course you take military action,” even though, American and Iranian military analysts warn, such strikes might only delay development of nuclear weapons. “Elect me as the next president,” he declared, and Iran “will not have a nuclear weapon.” Actually, if Tehran becomes convinced that an attack and attempted regime change are likely, it will have no choice but to develop nuclear weapons. How else to defend itself? The misguided war in Libya, which Romney supported, sent a clear signal to both North Korea and Iran never to trust the West. Iran’s fears likely are exacerbated by Romney’s promise to subcontract Middle East policy to Israel. The ties between the U.S. and Israel are many, but their interests often diverge. The current Israeli government wants Washington to attack Iran irrespective of the cost to America. Moreover, successive Israeli governments have decided to effectively colonize the West Bank, turning injustice into state policy and making a separate Palestinian state practically impossible. Perceived American support for this creates enormous hostility toward the U.S. across the Arab and Muslim worlds. Yet Romney promises that his first foreign trip would be to Israel “to show the world that we care about that country and that region” — as if anyone anywhere, least of all Israel’s neighbors, doesn’t realize that. He asserted that “you don’t allow an inch of space to exist between you and your friends and allies,” notably Israel. The U.S. should “let the entire world know that we will stay with them and that we will support them and defend them.” Indeed, Romney has known Israeli Prime Minister Benjamin Netanyahu for nearly four decades and has said that he would request Netanyahu’s approval for U.S. policies: “I’d get on the phone to my friend Bibi Netanyahu and say, ‘Would it help if I say this? What would you like me to do?’” Americans would be better served by a president committed to making policy in the interests of the U.S. instead. Romney’s myopic vision is just as evident when he looks elsewhere. For instance, he offered the singular judgment that Russia is “our number one geopolitical foe.” Romney complained that “across the board, it has been a thorn in our side on questions vital to America’s national security.” The Cold War ended more than two decades ago. Apparently Romney is locked in a time warp. Moscow manifestly does not threaten vital U.S. interests. Romney claimed that Vladimir “Putin dreams of ‘rebuilding the Russian empire’.” Even if Putin has such dreams, they don’t animate Russian foreign policy. No longer an ideologically aggressive power active around the world, Moscow has retreated to the status of a pre-1914 great power, concerned about border security and international respect. Russia has no interest in conflict with America and is not even much involved in most regions where the U.S. is active: Asia, the Middle East, and Latin America. Moscow has been helpful in Afghanistan, refused to provide advanced air defense weapons to Iran, supported some sanctions against Tehran, used its limited influence in North Korea to encourage nuclear disarmament, and opposes jihadist terrorism. This is curious behavior for America’s “number one geopolitical foe.” Romney’s website explains that he will “implement a strategy that will seek to discourage aggressive or expansionist behavior on the part of Russia,” but other than Georgia where is it so acting? And even if Georgia fell into a Russian trap, Tbilisi started the shooting in 2008. In any event, absent an American security guarantee, which would be madness, the U.S. cannot stop Moscow from acting to protect what it sees as vital interests in a region of historic influence. Where else is Russia threatening America? Moscow does oppose NATO expansion, which actually is foolish from a U.S. standpoint as well, adding strategic liabilities rather than military strengths. Russia strongly opposes missile defense bases in Central and Eastern Europe, but why should Washington subsidize the security of others? Moscow opposes an attack on Iran, and so should Americans. Russia backs the Assad regime in Syria, but the U.S. government once declared the same government to be “reformist.” Violent misadventures in Kosovo, Afghanistan, Iraq, and Libya demonstrate that America has little to gain and much to lose from another attempt at social engineering through war. If anything, the Putin government has done Washington a favor keeping the U.S. out of Syria. This doesn’t mean America should not confront Moscow when important differences arise. But treating Russia as an adversary risks encouraging it to act like one. Doing so especially will make Moscow more suspicious of America’s relationships with former members of the Warsaw Pact and republics of the Soviet Union. Naturally, Romney wants to “encourage democratic political and economic reform” in Russia — a fine idea in theory, but meddling in another country’s politics rarely works in practice. Just look at the Arab Spring. Not content with attempting to start a mini-Cold War, Mitt Romney dropped his nominal free-market stance to demonize Chinese currency practices. He complained about currency manipulation and forced technology transfers: “China seeks advantage through systematic exploitation of other economies.” On day one as president he promises to designate “China as the currency manipulator it is.” Moreover, he added, he would “take a holistic approach to addressing all of China’s abuses. That includes unilateral actions such as increased enforcement of U.S. trade laws, punitive measures targeting products and industries that rely on misappropriations of our intellectual property, reciprocity in government procurement, and countervailing duties against currency manipulation. It also includes multilateral actions to block technology transfers into China and to create a trading bloc open only for nations genuinely committed to free trade.” Romney’s apparent belief that Washington is “genuinely committed to free trade” is charming nonsense. The U.S. has practiced a weak dollar policy to increase exports. Washington long has subsidized American exports: the Export-Import Bank is known as “Boeing’s Bank” and U.S. agricultural export subsidies helped torpedo the Doha round of trade liberalization through the World Trade Organization. Of course, Beijing still does much to offend Washington. However, the U.S. must accommodate the rising power across the Pacific. Trying to keep China out of a new Asia-Pacific trade pact isn’t likely to work. America’s Asian allies want us to protect them — no surprise! — but are not interested in offending their nearby neighbor with a long memory. The best hope for moderating Chinese behavior is to tie it into a web of international institutions that provide substantial economic, political, and security benefits. Beijing already has good reason to be paranoid of the superpower which patrols bordering waters, engages in a policy that looks like containment, and talks of the possibility of war. Trying to isolate China economically would be taken as a direct challenge. Romney would prove Henry Kissinger’s dictum that even paranoids have enemies. Naturally, Romney also wants to “maintain appropriate military capabilities to discourage any aggressive or coercive behavior by China against its neighbors.” However, 67 years after the end of World War II, it is time for Beijing’s neighbors to arm themselves and cooperate with each other. Japan long had the second largest economy on earth. India is another rising power with reason to constrain China. South Korea has become a major power. Australia has initiated a significant military build-up. Many Southeast Asian nations are constructing submarines to help deter Chinese adventurism. Even Russia has much to fear from China, given the paucity of population in its vast eastern territory. But America’s foreign-defense dole discourages independence and self-help. The U.S. should step back as an off-shore balancer, encouraging its friends to do more and work together. It is not America’s job to risk Los Angeles for Tokyo, Seoul, or Taipei. Romney similarly insists on keeping the U.S. on the front lines against North Korea, even though all of its neighbors have far more at stake in a peaceful peninsula and are able to contain that impoverished wreck of a country. The Romney campaign proclaims: “Mitt Romney will commit to eliminating North Korea’s nuclear weapons and its nuclear-weapons infrastructure.” Alas, everything he proposes has been tried before, from tougher sanctions to tighter interdiction and pressure on China to isolate the North. What does he plan on doing when Pyongyang continues to develop nuclear weapons as it has done for the last 20 years? The American military should come home from Korea. Romney complained that the North’s nuclear capability “poses a direct threat to U.S. forces on the Korean Peninsula and elsewhere in East Asia.” Then withdraw them. Manpower-rich South Korea doesn’t need U.S. conventional support, and ground units do nothing to contain North Korea’s nuclear ambitions. Pull out American troops and eliminate North Korea’s primary threat to the U.S. Then support continuing non-proliferation efforts led by those nations with the most to fear from the North. That strategy, more than lobbying by Washington, is likely to bring China around. Romney confuses dreams with reality when criticizing President Obama over the administration’s response to the Arab Spring. “We’re facing an Arab Spring which is out of control in some respects,” he said, “because the president was not as strong as he needed to be in encouraging our friends to move toward representative forms of government.” Romney asked: “How can we try and improve the odds so what happens in Libya and what happens in Egypt and what happens in other places where the Arab Spring is in full bloom so that the developments are toward democracy, modernity and more representative forms of government? This we simply don’t know.” True, the president doesn’t know. But neither does Mitt Romney. The latter suffers from the delusion that bright Washington policymakers can remake the world. Invade another country, turn it into a Western-style democracy allied with America, and everyone will live happily every after. But George W. Bush, a member of Mitt Romney’s own party, failed miserably trying to do that in both Afghanistan and Iraq. The Arab Spring did not happen because of Washington policy but in spite of Washington policy. And Arabs demanding political freedom — which, unfortunately, is not the same as a liberal society — have not the slightest interest in what Barack Obama or Mitt Romney thinks. Yet the latter wants “convene a summit that brings together world leaders, donor organizations, and young leaders of groups that espouse” all the wonderful things that Americans do. Alas, does he really believe that such a gathering will stop, say, jihadist radicals from slaughtering Coptic Christians? Iraq’s large Christian community was destroyed even as the U.S. military occupied that country. His summit isn’t likely to be any more effective. Not everything in the world is about Washington. Which is why Romney’s demand to do something in Syria is so foolish. Until recently he wanted to work with the UN, call on the Syrian military to be nice, impose more sanctions, and “increase the possibility that the ruling minority Alawites will be able to reconcile with the majority Sunni population in a post-Assad Syria.” Snapping his fingers would be no less effective. Most recently he advocated arming the rebels. But he should be more cautious before advocating American intervention in another conflict in another land. Such efforts rarely have desirable results. Iraq was a catastrophe. Afghanistan looks to be a disaster once American troops come home. After more than a decade Bosnia and Kosovo are failures, still under allied supervision. Libya is looking bad. Even without U.S. “help,” a full-blown civil war already threatens in Syria. We only look through the glass darkly, observed the Apostle Paul. It might be best for Washington not to intervene in another Muslim land with so many others aflame. Despite his support for restoring America’s economic health, Romney wants to increase dramatically Washington’s already outsize military spending. Rather than make a case on what the U.S. needs, he has taken the typical liberal approach of setting an arbitrary number: 4 percent of GDP. It’s a dumb idea, since America already accounts for roughly half the globe’s military spending — far more if you include Washington’s wealthy allies — and spends more in real terms than at any time during the Cold War, Korean War, or Vietnam War, and real outlays have nearly doubled since 2000. By any normal measure, the U.S. possesses far more military resources than it needs to confront genuine threats. What Romney clearly wants is a military to fight multiple wars and garrison endless occupations, irrespective of cost. My Cato colleague Chris Preble figured that Romney's 4 percent gimmick would result in taxpayers spending more than twice as much on the Pentagon as in 2000 (111 percent higher, to be precise) and 45 percent more than in 1985, the height of the Reagan buildup. Over the next ten years, Romney's annual spending (in constant dollars) for the Pentagon would average 64 percent higher than annual post-Cold War budgets (1990-2012), and 42 percent more than the average during the Reagan era (1981-1989). If Mitt Romney really believes that the world today is so much more dangerous than during the Cold War, he should spell out the threat. He calls Islamic fundamentalism, the Arab Spring, the impact of failed states, the anti-American regimes of Cuba, Iran, North Korea, and Venezuela, rising China, and resurgent Russia “powerful forces.” It’s actually a pitiful list — Islamic terrorists have been weakened and don’t pose an existential threat, the Arab Spring threatens instability with little impact on America, it is easier to strike terrorists in failed states than in nominal allies like Pakistan and Saudi Arabia, one nuclear-armed submarine could vaporize all four hostile states, and Russia’s modest “resurgence” may threaten Georgia but not Europe or America. Only China deserves to be called “powerful,” but it remains a developing country surrounded by potential enemies with a military far behind that of the U.S. In fact, the greatest danger to America is the blowback that results from promiscuous intervention in conflicts not our own. Romney imagines a massive bootstrap operation: he wants a big military to engage in social engineering abroad which would require an even larger military to handle the violence and chaos that would result from his failed attempts at social engineering. Better not to start this vicious cycle. America faces international challenges but nevertheless enjoys unparalleled dominance. U.S. power is buttressed by the fact that Washington is allied with every industrialized nation except China and Russia. America shares significant interests with India, the second major emerging power; is seen as a counterweight by a gaggle of Asian states worried about Chinese expansion; remains the dominant player in Latin America; and is closely linked to most of the Middle East’s most important countries, such as Israel, Saudi Arabia, Egypt, Jordan, and Iraq. If Mitt Romney really believes that America is at greater risk today than during the Cold War, he is not qualified to be president. In this world the U.S. need not confront every threat, subsidize every ally, rebuild every failed state, and resolve every problem. Being a superpower means having many interests but few vital ones warranting war. Being a bankrupt superpower means exhibiting judgment and exercising discretion. President Barack Obama has been a disappointment, amounting in foreign policy to George W. Bush-lite. But Mitt Romney sounds even worse. His rhetoric suggests a return to the worst of the Bush administration. The 2012 election likely will be decided on economics, but foreign policy will prove to be equally important in the long-term. America can ill afford another know-nothing president.

### 1nc cp

**The United States Federal Government should establish a feed-in tariff that creates long-term purchase contracts for new qualifying facilities in the United States that use wind and solar power for energy production to ensure a reasonable rate of return.**

The United States federal government should:

- provide diminishing feed-in tariffs that long-term purchase contracts for new qualifying facilities, but recipients of the pla] must become cost competitive within a specified timeframe –and must improve in price and performance in order to continually receive this incentive.

- reduce feed-in tariffs as wind and solar power improves in price and performance.

#### Temporary, diminishing incentives are vital to inducing competition, technological innovation and ending subsidy dependence

**Jenkins, 12** – Director of Energy and Climate Policy at the Breakthrough Institute (Jesse, Congressional Testimony before the Senate Committee on Energy and Natural Resources, 5/22, <http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=31b79a1a-83a0-4ae6-8c80-30fe754ad0ea>)

Recognizing that investment horizons, technology development cycles, and market conditions vary across advanced energy technology segments, precise policy mechanisms will likely differ from sector to sector. Yet whether through production or investment subsidies, consumer rebates, market-­‐creating regulations or standards, or other market incentives, we recommend that any advanced energy deployment subsidies meet the following policy design criteria. Reformed policies should:¶ 1. ESTABLISH A COMPETITIVE MARKET. Deployment policies should create market opportunities for advanced clean energy technologies while fostering competition between technology firms.¶ 2. DRIVE COST REDUCTIONS AND PERFORMANCE IMPROVEMENTS. Deployment policies should create market incentives and structures that demand and reward continual improvement in technology performance and cost.¶ 3. PROVIDE TARGETED AND TEMPORARY SUPPORT FOR MATURING TECHNOLOGIES. Deployment policies must not operate in perpetuity, but rather should be terminated if technology segments either fail to improve in price and performance or become competitive without subsidy.¶ 4. REDUCE SUBSIDY LEVELS IN RESPONSE TO CHANGING TECHNOLOGY COSTS. Deployment incentives should decline as technologies improve in price and performance to both conserve limited taxpayer and consumer resources and provide clear incentives for continued technology improvement.¶ 5. AVOID TECHNOLOGY LOCK-OUT AND PROMOTE A DIVERSE ENERGY PORTFOLIO. Deployment incentives should be structured to create market opportunities for energy technologies at different levels of maturity, including new market entrants, to ensure that each has a chance to mature while allowing technologies of similar maturity levels to compete amongst themselves.¶ 6. PROVIDE SUFFICIENT BUSINESS CERTAINTY. While deployment incentives should be temporary, they must still provide sufficient certainty to support key business decisions by private firms and investors.¶ 7. MAXIMIZE THE IMPACT OF TAXPAYER RESOURCES AND PROVIDE READY ACCESS TO AFFORDABLE PRIVATE CAPITAL. Deployment incentives should be designed to avoid creating unnecessarily high transaction costs while opening up clean tech investment to broader private capital markets.

#### Conditioning new incentives on price competition solves the aff better and avoids our disads

**Hayward, 10** – resident scholar at the American Enterprise Institute (Steven, “Post-Partisan Power: How a Limited and Direct Approach to Energy Innovation Can Deliver Clean, Cheap Energy, Economic Productivity and National Prosperity”, October, <http://thebreakthrough.org/blog/Post-Partisan%20Power.pdf>)

The government has a long history of successfully driving innovation and price declines in emerging technologies by acting directly as a demanding customer to spur the early commercialization and largescale deployment of cutting-edge technologies. From radios and microchips to lasers and camera lenses, the federal government, in particular the DOD, has helped catalyze the improvement of countless innovative technologies and supported the emergence of vibrant American industries in the process. 67¶ Yet today’s mess of open-ended energy subsidies reward production of more of the same product, not innovation. The federal government showers subsidies across many energy options, from oil and coal to ethanol and wind power. None of these efforts, however, are designed or optimized to drive and reward innovation and ensure the prices of these technologies fall over time, making the subsidies effectively permanent. This must change.¶ Competitive Deployment Incentives¶ The current energy subsidy and deployment framework should be turned on its head. Government investments succeed not when they are blanket subsidies but rather when they are narrowly targeted to specific outcomes, such as developing computers to allow for rocket systems, building a communications network to survive a nuclear attack, or creating increasingly efficient and powerful jet engines. These public investments paid off handsomely in personal computers, the Internet, and gas turbines used in both commercial air travel as well as modern natural gas power plants. 68¶ In an era of expanding federal debt, across-the-board energy subsidy reform should be pursued. Incentives for energy technology deployment should be targeted and disciplined. Technologies should receive competitive deployment incentives only to the extent that they are becoming cheaper in unsubsidized terms over time. ¶ The strategy that we propose would be aimed at low-carbon technologies that, at a minimum, satisfy the following criteria: ¶  The technology has been demonstrated and has proven technical feasibility at commercial scale; ¶  Is currently priced above normal market rates and is locked out of markets by more mature, ¶ entrenched technology competitors; ¶  Has potential for significant and sustained cost and performance improvements during deployment ¶ and scale-up; ¶ #Has strong prospects for significant market penetration once the technology reaches competitive ¶ prices. ¶ Targeted and competitive deployment incentives could be created for various classes of energy technologies to ensure that each has a chance to mature. Incentive levels should fall at regular intervals, terminating if the technology class either fails to improve in price or reaches cost parity in the absence of any further incentives.¶ Structured in this manner, reformed national energy deployment incentives will not select winners and losers, nor will it create permanently subsidized industries. These public investments will instead provide opportunity for all emerging low-carbon energy technologies to demonstrate progress toward competitive costs while increasing the rate at which early-stage clean and affordable energy technologies are commercialized.

#### The CP prevents the collapse of the energy bubble – avoids economic collapse

**Swezey, 11** – project director for The Breakthrough Institute (Devon, “Clean Tech Sector Heading for a Major Crash” 7/11, <http://blacklistednews.com/?news_id=14600&print=1>)

The global clean energy industry is set for a major crash. The reason is simple. Clean energy is still much more expensive and less reliable than coal or gas, and in an era of heightened budget austerity the subsidies required to make clean energy artificially cheaper are becoming unsustainable.

Clean tech crashes are nothing new. The U.S. wind energy industry has collapsed three times before, first in the mid 1990s and most recently in 2002 and 2004 when Congress failed to extend the tax credit that made it profitable. But the impact and magnitude of the coming clean tech crash will far outstrip those of past years.

As part of its effort to combat the economic recession, the federal government pumped nearly $80 billion in direct investment and tax credits into the clean energy sector, catalyzing an unprecedented industry expansion. Solar energy, for example, grew 67% in the United States in 2010. The U.S. wind energy industry also experienced unprecedented growth as a result of the generous Section 1603 clean energy stimulus program. The industry grew by 40% and added 10 GW of new turbines in 2009. Yet many of the federal subsidies that have driven such rapid growth are set to expire in the next few years, and clean energy remains unable to compete without them.

The crash won't be limited to the United States. In many European countries, clean energy subsidies have become budget casualties as governments attempt to curb mounting deficits. Spain, Germany, France, Italy and the Czech Republic have all announced cuts to clean energy subsidies.

Such cuts are not universal, however. China, flush with cash, is bucking the trend, committing $760 billion over 10 years for clean energy projects. China is continuing to invest in low-carbon energy as a way of meeting its voracious energy demand, diversifying its electricity supply, and alleviating some of the negative health consequences of its reliance on fossil energy.

If U.S. and European clean energy markets collapse while investment continues to ramp up in China, the short-term consequences will likely be a migration of much of the industry to Asia. As we wrote in our 2009 report, "Rising Tigers, Sleeping Giant," this would have significant economic consequences for the United States, as the jobs, revenues and other benefits of clean tech growth accrue overseas.

In the long-term, however, clean energy must become much cheaper and more reliable if it is to widely displace fossil fuels on the scale of national economies and become a commercially viable industry.

Breaking the Boom-Bust Cycle

Why is the United States still locked in this self-perpetuating boom-bust cycle in clean energy? The problem, according to a new essay by energy experts David Victor and Kassia Yanosek in this week's Foreign Affairs, is that our system of clean energy subsidization is jury-rigged to support the deployment of only the least-risky and most mature clean energy technologies, while lacking clear incentives for continual innovation that could make clean energy competitive on cost with conventional energy sources. Rather, we should "invest in more innovative technologies that stand a better chance of competing with conventional energy sources over the long haul." According to Victor and Yanosek, nearly seven-eighths of global clean energy investment goes toward deploying existing technologies that aren't competitive without subsidy, while only a small share goes to encouraging innovation in existing technologies or developing new ones.

This must change. Rather than simply subsidize production of current technologies, we need a comprehensive energy innovation strategy to develop, manufacture, and deploy riskier but more promising clean energy technologies that may eventually compete with fossil energy at scale. Instead of rewarding companies for building the same product, we should reward companies who continuously improve designs and cut costs over time.

Such a federal strategy will require major federal investments, but of a different kind than the subsidies that have driven the clean tech industry in years past. For starters, we must dramatically ramp up funding for early-stage clean energy research and development. A growing bipartisan group of think tanks and business leaders have pushed an investment of at least $15 billion annually in energy R&D, up from its current $4 billion level.

Targeted funding is needed to solve technology challenges and ensure that innovative technologies can develop and improve. One key program that helps fulfill this need is ARPA-E, which funds a portfolio of innovative technology companies and helps connect them with private investors. But ARPA-E's budget has continually been under assault in budget negotiations, hampering its ability to catalyze innovation in the energy sector and limiting its impact.

We also need to invest in cutting-edge advanced manufacturing capabilities and shared technology infrastructure that would help U.S. companies cut costs and improve manufacturing processes. As the President's Council of Advisors on Science and Technology wrote in a report released last week, manufacturing is vital to innovation, "because of the synergies created by locating production processes and design processes near to each other." Furthermore, bringing down manufacturing costs, such as by supporting shared infrastructure for small firms, or offering financing for the adoption of innovative technologies in manufacturing, will be a key component of reducing the costs of new clean energy innovations.

Lastly, the nation's hodgepodge of energy deployment subsidies is in dire need of reform. As Breakthrough and colleagues wrote in "Post-Partisan Power," we need an energy deployment regime that demands and rewards innovation, rather than just supporting more of the same. Brookings' Mark Muro (a co-author or PPP) expands, "targeted and competitive deployment incentives could be created for various classes of energy technologies that would ensure that each has a chance to mature even as each is challenged to innovate and locate price declines." Rather than create permanently subsidized industries, such investments would "provide the opportunity for opportunity for all emerging low-carbon energy technologies to demonstrate progress toward competitive costs," while speeding commercialization.

It is clear that the current budgetary environment in the United States presents challenges to the viability of the fast-growing clean energy industry. But it also presents an opportunity. By repurposing existing clean energy policies and investing in clean energy innovation, the United States can be the first country to make clean energy cheap and reliable, a distinction that is sure to bring major economic benefits in a multi-trillion dollar energy market.

### 1nc CP

The 50 state governments should:

* establish a uniform Renewable Portfolio Standard requiring that twenty percent of electricity produced comes from renewable sources.
* establish a feed-in tariff that creates long-term purchase contracts for new qualifying facilities that use wind and solar power for energy production to ensure a reasonable rate of return.

#### States can do feed-in tariffs

[**Sawin**](http://www.sciencedirect.com.monstera.cc.columbia.edu:2048/science?_ob=ArticleURL&_udi=B6VSS-4NJP9CG-1&_user=18704&_coverDate=05%2F31%2F2007&_alid=772549448&_rdoc=27&_fmt=high&_orig=search&_cdi=6270&_sort=d&_docanchor=&view=c&_ct=67&_acct=C000002018&_version=1&_urlVersion=0&_userid=18704&md5=27e009d5980baf378f87e6ae10344e08#bvt2) **7** – Director of the Energy and Climate Change Program at the Worldwatch Institute, an independent org in D.C.

(Janet L.“If the Shoe FITs: Using Feed next term-in previous term Tariffsnext term to Meet U.S. Renewable Electricity Targets” The Electricity Journal, Volume 20, Issue 4, May 2007, Pages 73-86)

A second possibility is that states (or utilities) could use fixed-price tariffs to contract for utility-scale renewable energy generators, as suggested in California. Long-term contracts for bundled RECs and electricity are already in use in several regulated states, and have emerged in Texas as well. Further, NYSERDA procures RECs for large-scale generators through long-term contracts in New York State, and Connecticut's Project 100 Initiative offers 10-year, long-term contracts for up to 100 MW of renewable energy projects. Currently, all of these long-term contracts must be competed for or negotiated, rather than awarded automatically. Nevertheless, it is possible that states with existing long-term contracting could shift to more transparent and standard long-term contracts similar to feed-in tariffs.

#### The CP codifies status quo RPS trends to integrate coordinate with other states – it will rapidly spur renewable integration

**Byrne, 7** –Center for Energy and Environmental Policy (John, “American policy conflict in the greenhouse: Divergent trends in federal, regional, state, and local green energy and climate change policy” Energy Policy Volume 35, Issue 9, September 2007, science direct)

In addition to the creation of voluntary investments in renewables, a number of states have mandated that utilities supply a baseline amount of green power to their customers. Known as Renewable Portfolio Standards (RPS), these policies establish renewable energy procurement quotas for utilities according to a schedule typically running for 10–15 years. As of February 2007, 23 states and the District of Columbia have enacted renewable portfolio standards, while another fourteen states are considering RPS regulation (Fig. 3). No two RPS laws are alike and some policy regimes have performed better than others (van der Linden et al., 2005 N.H. van der Linden, M.A. Uyterlinde, C. Vrolijk, L.J. Nilsson, J. Khan and K. Åstrand et al., Review of International Experience with Renewable Energy Obligation Support Mechanisms, Energy research Centre of the Netherlands, Petten, Netherlands (2005).van der Linden et al., 2005). Generally speaking, however, there is a distinct trend towards stronger RPS policies and regional market integration. Only two states have voluntary standards—Illinois and Vermont—and both are now considering RPS mandates (DSIRE, 2007).Most states with RPS policies in place for three or more years have strengthened their laws, accelerated compliance schedules, or proposed new targets (Rickerson, 2005). For example, in 2006 New Jersey accelerated its compliance schedule and increased its target to 20% by 2020 (DSIRE, 2007). Utilities in Wisconsin over-complied with the initial 2.2% by 2012 goal, and in 2006 the state increased its target to 10% by 2015 (Governor's Task Force, 2004). California has accelerated its RPS schedule partly because one utility, Southern California Edison, is already close to the 20% requirement with 17.7% of its supply derived from renewable energy (California Public Utilities Commission, 2006). As a result, the state has revised its RPS schedule from 20% by 2017 to 20% by 2010 (Doughman et al., 2004).While Texas initially accounted for most of the renewable MW capacity installed in RPS markets (Petersik, 2004), renewable energy installations are now becoming more widely distributed as new and strengthened RPS regimes have appeared across the American landscape. The Union of Concerned Scientists (2006a) projects over 44,900 MW of new renewable capacity will be added to the grid by 2020 to satisfy current RPS mandates (see also Byrne et al., 2005b).Another sign of the growing maturity and momentum of state RPS policies is the trend toward regional coordination and integration. In order to encourage supply diversity, almost every state RPS policy in the US permits its utilities to procure renewable resources from neighboring states. As a result, markets for tradable renewable energy credits (RECs)5 have emerged to facilitate compliance in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, Texas and Washington, DC. The existence of a solar PV “carve out” requirement in New Jersey's RPS has created solar-specific REC prices above $200/megawatt-hour (MWh) (Holt and Bird, 2005, p. 2; Evolution Markets LLC, 2006), and similar requirements in Pennsylvania, New York and Washington, DC could drive solar PV market growth region wide. To support these markets, regional authorities have established credit-tracking systems in the Northeast, Mid-Atlantic, and Texas. Similar systems are also under development for the states of the West and the upper Midwest (Porter and Chen, 2004; Wingate and Lehman, 2003 M. Wingate and M. Lehman, The Current Status of Renewable Energy Certificate Tracking Systems in North America, Center for Resource Solutions, San Francisco, CA (2003) (Prepared for the Commission for Environmental Cooperation).Wingate and Lehman, 2003). These systems facilitate RPS compliance and encourage non-RPS states to develop resources for participation in regional RPS markets. To date, RPS has proven to be the most successful tool used by states in the US to realize rapid development of renewable energy options.

### 1nc da

#### Obama leverage key to resolve fiscal cliff now – he will force a compromise

Lori Montgomery (writer for the Washington Post) October 18, 2012 “Obama to wield his leverage on 'cliff'” Lexis

President Obama is prepared to veto legislation to block year-end tax hikes and spending cuts, collectively known as the "fiscal cliff," unless Republicans bow to his demand to raise tax rates for the wealthy, administration officials said. Freed from the political and economic constraints that have tied his hands in the past, Obama is ready to play hardball with Republicans, who have so far successfully resisted a deal to tame the debt that includes higher taxes, Obama's allies say. In the days after the November election, the tables will be turned: Taxes are scheduled to rise dramatically in January for people at all income levels, and Republicans will be unable to stop those automatic increases alone. If he wins reelection, Obama may finally be able to dictate the terms of a bipartisan debt-reduction deal. And if he loses to Republican Mitt Romney, Obama could make sure that tax rates rise before he hands over the keys to the White House on Inauguration Day in late January. Administration officials declined to say whether the veto threat will stand if Obama loses the election. Obama has never explicitly said whether he is prepared to let the new year arrive without taking action to avoid the cliff. Some Republicans, noting that the president has backed off demands for higher taxes twice in the past, are skeptical that he will stand firm now. But his veto threat challenges Republicans to a dangerous game of chicken over a fiscal event that would raise taxes for nearly 90 percent of households, slice deeply into military and domestic budgets, and probably spark a brief recession. House Speaker John A. Boehner (R-Ohio) and other Republican leaders are already complaining about the president's " 'Thelma and Louise' economic strategy." (In the 1991 film, the lead characters drive off a cliff in a 1966 Thunderbird convertible rather than surrender to police.) But Obama's threat has concentrated their attention. If the president emerges victorious on Election Day, top GOP aides in both chambers say Republicans would press him to abandon his quest to raise the top rates, in exchange for a more meaningful prize - a long-sought agreement to stabilize the debt, in part with significant new tax revenue. Virtually all Republicans have long opposed higher taxes. "That's the solution to the Rubik's Cube: The current president wants additional revenues. Republicans don't want higher tax rates," said Jonathan Traub of Deloitte Tax LLP, Click for Enhanced Coverage Linking Searcheswho served until this year as a senior aide to House Ways and Means Committee Chairman Dave Camp (R-Mich.). Rewriting the tax code to increase tax collections without raising rates, Traub said, is "the only way to make the squares line up." Impediments to a deal are legion. Democrats pumped up on an Obama victory would resist compromise on the top rate, a point of partisan contention since it fell from 39.6 percent to 35 percent more than a decade ago as part of a package of tax cuts signed by President George W. Bush. The Bush cuts, which reduced rates at all income levels, are set to expire Dec. 31. Obama and other Democrats want to extend them for income under $250,000 a year, maintaining the low rates for about 97 percent of taxpayers. But Obama has been promising to eliminate the Bush tax cuts for the top 3 percent of households since the 2008 campaign, and liberals were furious with his decision to extend them in 2010. Last week, Sen. Charles E. Schumer (D-N.Y.) planted a flag firmly for returning the top rate to 39.6 percent, arguing that Obama has made higher taxes for the rich a centerpiece of his reelection campaign and that polls show the public overwhelmingly supports the Democratic position. "We have worked very hard to separate tax breaks for the rich from tax breaks for the middle class, on both ends of Pennsylvania Avenue," said Schumer, the No. 3 Democrat in the Senate. "The fact that we're winning on this issue is a sea change." Some Republicans - such as Sen. Jim DeMint (R-S.C.), a tea-party favorite - have conceded that an Obama election victory would amount to a mandate to raise the top rates. But Boehner recently ruled out that idea, and senior GOP aides say letting the top rate rise, even briefly, above 35 percent is a line party leaders cannot cross. "The hard truth, which even the president's advisers must know, is that raising those tax rates will have a major effect on small businesses and cost hundreds of thousands of jobs," said Boehner spokesman Kevin Smith. "In this troubled economy, it's hard to see how anyone in a post-election scenario could be for that." Still, Republicans acknowledge that Obama could emerge from the November election with a strong hand, and policy aides in both chambers are sorting through idxiseas for raising taxes on the rich without raising rates.

#### Plan causes backlash

Petroleum Intelligence Weekly, 1/9/12, Obama Plays Safe on Energy Policy, Lexis

With less than a year to go until he faces re-election, US President Barack Obama is trying to avoid controversial energy policy decisions, postponing the finalization of restrictions on oil refinery and power plant emissions and delaying the approval of a major crude pipeline project. The president’s caution will prolong the status quo on issues where the industry both opposes and supports the administration’s plans, and also illustrates what's at stake for energy policy depending on whether or not Obama is given another four years in office. Most of Obama's original campaign pledges on promoting alternatives to fossil fuels and tackling climate change have not passed muster with Congress, most notably an ambitious plan for national carbon controls, a subsequent toned-down clean energy standard floated after the carbon legislation failed, and repeated efforts to repeal $30 billion-$40 billion worth of oil industry tax deductions over 10 years ( PIW May9'11 ). The one exception has been the passage of $90 billion in clean energy funding as part of an economic stimulus bill passed early in Obama's term, but the White House has been unable to repeat this success in other energy policy areas ( PIW Feb.23'09 ).

#### Obama’s political capital will give him leverage in the ‘fiscal cliff’ negotiations now – brokers a deal

Andrew Sprung (he is the CEO of Sprung PR and hold a PhD from the University of Rochestor) September 21, 2012 “Ezra Klein's unconvincing theory that Obama misunderstands (or misrepresents) "change," http://xpostfactoid.blogspot.com/2012/09/ezra-kleins-unconvincing-theory-that.html)

In my view, Klein is viewing this question too narrowly. Obama is well aware of the limitations of the bully pulpit, and he's got to know better than any person on the planet that presidential advocacy polarizes, entrenching the opposing party in implacable opposition to whatever the president proposes. Yet, in presenting a revamped theory of how the presidency works, he's not just feeding us a line of BS. And if Obama wins reelection, I believe that we will look back five or ten or twenty years from now and recognize that yes, Obama did change the way Washington works. Or at the very least, he kept the US on a sane policy course in a time of extreme polarization and thus gave (will have given...) the system space to self-correct, as it has in the past. Let's start with Klein's objection to Obama's characterization of how healthcare reform got done: The health-care process, which I reported on extensively, was a firmly “inside game” strategy. There were backroom deals with most every major interest group and every swing legislator.... By the time the law passed, many more Americans viewed it unfavorably than viewed it favorably — exactly the opposite of what you’d expect if health care had passed through an “outside game” strategy in which, as Obama put it, “the American people … put pressure on Congress to move these things forward.” And yet, health care passed. The inside game worked. All true, laddie. And yet, in claiming that the impetus for healthcare reform came from the outside, I don't think Obama is attempting to whitewash this long and messy process -- or is even referring to it. He is alluding to the marshaling or channeling of popular will that got him elected. The essence of Obama's primary election argument against Hillary Clinton was that he was better equipped to marshal the popular will for fundamental change -- with healthcare reform as the centerpiece -- than she was. I well remember the moment when that argument first impressed itself on me. It was in a debate in the immediate aftermath of the Iowa caucuses, on Jan. 5, 2008: Look, I think it's easier to be cynical and just say, "You know what, it can't be done because Washington's designed to resist change." But in fact there have been periods of time in our history where a president inspired the American people to do better, and I think we're in one of those moments right now. I think the American people are hungry for something different and can be mobilized around big changes -- not incremental changes, not small changes. I actually give Bill Clinton enormous credit for having balanced those budgets during those years. It did take political courage for him to do that. But we never built the majority and coalesced the American people around being able to get the other stuff done. And, you know, so the truth is actually words do inspire. Words do help people get involved. Words do help members of Congress get into power so that they can be part of a coalition to deliver health care reform, to deliver a bold energy policy. Don't discount that power, because when the American people are determined that something is going to happen, then it happens. And if they are disaffected and cynical and fearful and told that it can't be done, then it doesn't. I'm running for president because I want to tell them, yes, we can. And that's why I think they're responding in such large numbers.

Cue the political science eye-roll. The American people were not "determined" that healthcare reform per se had to occur. You can't read the results of the 2008 wave election as a "mandate" for a specific policy. In the aftermath, the electoral tide went back out with a vengeance. But it's also true that in two years of campaigning Obama's words did inspire people, that the American people were hungry for change after Bush, that Obama made a broad and conceptually coherent case for moving the center of American politics back to the left with a renewed commitment to shared prosperity and investment in the common good, and that healthcare reform was at the center of that case. True too that the results of that election gave him enough of a majority to persist, even when relentless Republican misinformation and bad-faith negotiation and delay eroded public support. Obama also used the bully pulpit at crucial points, if not to rally public opinion, at least to re-commit wavering Democrats -- and also to convince the public, as he enduringly has, that he was more of a good faith negotiator, more willing to compromise, than the Republicans. Those pressure points were the September 2009 speech he gave to a joint session of Congress, and the remarkable eight-hour symposium he staged with the leadership of both parties in late February 2010 to showcase the extent to which the ACA incorporated past Republican proposals and met goals allegedly shared by both parties, as well as his own bend-over-backwards willingness to incorporate any Republican ideas that could reasonably be cast as advancing those goals. In a series of posts about Ronald Reagan, Brendhan Nyhan has demonstrated that presidential rhetoric generally does not sway public opinion. Savvy politicians channel public opinion; transformative ones seize an opportunity when their basic narrative of where the country needs to go aligns with a shift in public opinion, usually in response to recent setbacks or turmoil. Obama, like Reagan, effected major change in his first two years because he caught such a wave -- he amassed the political capital, and he spent it, and we got what he paid for. The force from outside -- a wave election -- empowered Obama to work change from inside in a system that reached a new peak of dysfunctionality. Klein's also objects to Obama's pitch for how to effect change going forward. In 2011, he notes, Obama highlighted the substantial change won from the messy inside game of legislating, touting the long list of legislative accomplishments of the 111th Congress. In election season, he has reverted to a keynote of his 2008 campaign: change comes from you, the electorate; it happens when ”the American people … put pressure on Congress to move these things forward.” Klein regards this as election season hooey: But while this theory of change might play better, it’s the precise theory of change that the last few years have shattered. Whatever you want to say about the inside game, it worked. Legislation passed. But after the midterm elections, it stopped working. And so the White House moved towards an outside game strategy, where ”the American people … put pressure on Congress to move these things forward.” Perhaps the most public example was Obama’s July 2011 speech, in which he said: I’m asking you all to make your voice heard. If you want a balanced approach to reducing the deficit, let your member of Congress know. If you believe we can solve this problem through compromise, send that message. So many Americans responded that Congress’s Web site crashed. But Obama didn’t get his “balanced approach,” which meant a deal including taxes. Klein goes on to recount that throughout the past year of confrontation with the GOP, pushing a jobs package that had broad popular support, Obama won only one minor victory, extension of the payroll tax cut. He then reverts to two political science tenets: presidential advocacy entrenches the opposition, and it can't move popular opinion. But I think he misreads Obama's pitch, strategy and record on several counts. First, he understates Obama's (and the Democrats') successes in the year of confrontation that has followed the debt ceiling debacle. He writes off the payroll tax cut and unemployment benefit extension as small beer. But this was actually a near-total victory in two stages against entrenched opposition, and it won Obama some vital back-door stimulus for the second year running in the wake of the GOP House takeover. It was followed by a similar GOP cave-in on maintaining low student loan interest rates -- and then again, by the collapse of the House GOP effort to renege on the Budget Control Act and impose still more spending cuts. Presidential rhetoric may not change the public mind. But when it's in sync with voter's propensities, it can deploy public opinion to bring pressure to bear on the opposition. Second, it's true that under threat of GOP debt ceiling extortion, Obama successfully marshaled public opinion in favor of his "balanced" approach to deficit reduction but wasn't able to use that pressure to move the GOP off their no-new-taxes intransigence. But that battle ain't over yet, and popular support for Obama's position is political capital that's still in the bank. In the upcoming fiscal cliff negotiations, Obama, if he wins reelection, will have the whip hand, given the expiration of the Bush tax cuts and Republican teeth-gnashing over the defense cuts in the sequester. Speaking of which, Obama's refusal to intervene in the supercommittee negotiations as Republicans stonewalled once again over any tax hikes banked him further capital in this upcoming fight. Republicans are screaming much louder than Democrats about the sequester, disastrous though the cuts may be on the domestic side. Third, it's rational for Obama to recast his bid for change in election season, because of course he's seeking further "change" from the outside, i.e., more Democrats elected to Congress. He's not going to win a mandate as in 2008, or, most likely, majorities in both houses of Congress. But he has to make the pitch for being granted renewed tools to advance his agenda. Finally, a key part of Obama's "you are the change" pitch in his convention speech was a frank call to play defense -- to protect the changes wrought in his first term and fend off the further capture of the electoral process and the nation's resources by the oligarchy the GOP represents: If you turn away now – if you buy into the cynicism that the change we fought for isn’t possible … well, change will not happen. If you give up on the idea that your voice can make a difference, then other voices will fill the void: lobbyists and special interests; the people with the $10 million checks who are trying to buy this election and those who are making it harder for you to vote; Washington politicians who want to decide who you can marry, or control health-care choices that women should make for themselves.

**Failure to pass fiscal cliff guarantee collapse of the economy and hegemony – causes Middle East war**

Kay Bailey Hutchison (U.S. Senator from Texas) 9/21/2012 “A Looming Threat to National Security,” States News Service, Lexis

Despite warnings of the dire consequences, America is teetering at the edge of a fiscal cliff, with January 1st, 2013 as the tipping point. On that date, unless Congress and the White House can reach agreement on how to cut the federal deficit, all taxpayers will be hit with higher taxes and deep cuts - called "sequestration" - will occur in almost all government spending, disrupting our already weak economy and putting our national security at risk. According to the House Armed Services Committee, if sequestration goes into effect, it would put us on course for more than $1 trillion in defense cuts over the next 10 years. What would that mean? A huge hit to our military personnel and their families; devastating cuts in funding for critical military equipment and supplies for our soldiers; and a potentially catastrophic blow to our national defense and security capabilities in a time of increasing violence and danger. All Americans feel a debt of gratitude to our men and women who serve in uniform. But Texas in particular has a culture that not only reveres the commitment and sacrifice they make to protect our freedom, we send a disproportionate number of our sons and daughters to serve. The burden is not borne solely by those who continue to answer the call of duty, but by their families as well, as they endure separation and the anxiety of a loved one going off to war. These Americans have made tremendous sacrifices. They deserve better than to face threats to their financial security and increased risks to their loved ones in uniform, purely for political gamesmanship. Sequestration would also place an additional burden on our economy. In the industries that support national defense, as many as 1 million skilled workers could be laid off. With 43 straight months of unemployment above 8 percent, it is beyond comprehension to add a virtual army to the 23 million Americans who are already out of work or under-employed. Government and private economic forecasters warn that sequestration will push the country back into recession next year. The recent murder of our Ambassador to Libya and members of his staff, attacks on US embassies and consulates and continued riots across the Middle East and North Africa are stark reminders that great portions of the world remain volatile and hostile to the US. We have the mantle of responsibility that being the world's lone super-power brings. In the absence of U.S. military leadership, upheaval in the Middle East would be worse. As any student of history can attest, instability does not confine itself to national borders. Strife that starts in one country can spread like wildfire across a region. Sequestration's cuts would reduce an additional 100,000 airmen, Marines, sailors and soldiers. That would leave us with the smallest ground force since 1940, the smallest naval fleet since 1915 and the smallest tactical fighter force in the Air Force's history. With the destabilization in the Middle East and other areas tenuous, we would be left with a crippled military, a diminished stature internationally and a loss of technological research, development and advantage - just as actors across the globe are increasing their capabilities. Sequestration can still be avoided. But that will require leadership from the President that has thus far been missing. Congress and the White House must reach a long-term agreement to reduce $1 trillion annual budget deficits, without the harsh tax increases that could stall economic growth and punish working families.

#### Extinction

Rod 10 (Vincent, April. 19, “Some details on World War III,” <http://www.courlisius.org/en/some-details-on-world-war-three>)

According to Puntalangit, the Middle East war is the CATALYST of WORLD WAR III. The visionary warns that WORLD WAR III will occur AFTER THIRTEEN WEEKS from the moment the Middle East crisis becomes a FULL BLOWN WAR. He further warns of a NUCLEAR ATTACK on one of US major cities which will occur THIRTEEN DAYS after the escalation of war in the Middle East. This Middle East War is a must for Islamic-Russian-Chinese alliance as it will WEAKEN THE WEST. ISRAEL is only a scapegoat and they will use her to CREATE A FULL BLOWN WAR in the region. Either Israel is forced to strike Iran OR they will initiate the attack on Israel. A MIDDLE EAST WAR IS A REQUIREMENT FOR THE THIRD WORLD WAR because it will WEAKEN the West economically and militarily. This is an ADVANTAGE the Islamic-Communist Alliance will need in order to INSTIGATE CHAOS IN EUROPE, AMERICA and the whole world. The visionary further warns that ONLY HALF of the US forces in SAUDI ARABIA will escape the first onslaught, and of that half ONLY ANOTHER HALF will make it BACK HOME to the US alive. Although the US WILL NOT LOSE WORLD WAR III, NEITHER will this great war BE GLORIOUS for the US. In the first THIRTEEN MONTHS of the War, America will commit blunder after blunder. Several NATIONS are also said to be ANNIHILATED during the course of the Third World War according to Puntalangit's prophecies. SLOVAKIA, SINGAPORE and SWITZERLAND will be ANNIHILATED among many others. INDIA, JAPAN, MALAYSIA, PHILIPPINES, POLAND, and KOREA will be SEVERELY AFFECTED. Only a tenth of JAPAN'S, TAIWAN'S, and POLAND'S population will survive. Three of every ten FILIPINOS will die in the War. MALAYSIA will come and aid the PHILIPPINES during the great war while INDONESIA will SIDE WITH COMMUNIST-ISLAMIC ALLIANCE. INDIA will be utilized by the CHINESE before it finaly breaks free and aides the West. AUSTRALIA will be rocked by internal strife. ALMOST ALL ISLAMIC NATIONS WILL BE ANNIHILATED after this war for EVEN THEIR ALLIES WILL BETRAY THEM.

### Adv 1

#### Global coal emissions will substantially overwhelm the effect of the plan

**Berlin and Sussman, 07** – \* former Chairman of the Board of the Environmental Law Institute and a former member of the Board of the Environmental Alliance AND \*\* served as Deputy Administrator of the Environmental Protection Agency and on the Board of Directors of the Environmental Law Institute (Ken and Robert, “Global Warming and the Future of Coal Carbon Capture and Storage”, 5/31, http://www.americanprogress.org/issues/2007/05/pdf/coal\_report.pdf

In the United States alone, about 145 gigawatts of new power from coal-fired plants are projected to be built by 2030, resulting in CO2 emissions of 790 million metric tons per year in the absence of emission controls. By comparison, annual U.S. emissions of CO2 from all sources in 2005 were about 6 billion metric tons.3

Policymakers and scientists now recognize that the current growth of greenhouse gas emissions must be reversed and that emissions must be reduced substantially in order to combat the risk of climate change. Yet a dramatic increase in coal-fired power generation threatens to overwhelm all other efforts to lower emissions and virtually guarantees that these emissions will continue to climb. This would preclude any possibility of stabilizing greenhouse gas concentrations in the atmosphere at levels that would acceptably moderate the predicted rise in global temperatures.

In China and other developing countries experiencing strong economic growth, demand for power is surging dramatically, with low-cost coal the fuel of choice for new power plants. Emissions in these countries are now rising faster than in developed economies in North America and Europe: China will soon overtake the United States as the world’s number one greenhouse gas emitter. With the power sector expanding rapidly, China and India will fall further behind in controlling greenhouse gas emissions unless new coal plants adopt emission controls. Lack of progress in these countries would doom to failure global efforts to combat global warming.

The Promise of Carbon Capture and Storage

Fortunately, there is a potential pathway that would allow continued use of coal as an energy source without magnifying the risk of global warming. Technology currently exists to capture CO2 emissions from coal-fired plants before they are released into the environment and to sequester that CO2 in underground geologic formations. Energy companies

boast extensive experience sequestering CO2 by injecting it into oil fields to enhance oil recovery. Although additional testing is needed, experts are optimistic this practice can be replicated in saline aquifers and other geologic formations that are likely to constitute the main storage reservoirs for CO2 emitted from power plants.

#### Modeling won’t happen unless coal is given priority in energy policy decisions, it’s the cheapest source for developing countries and perceived as vital to their economy

**Roberts, 4** [Paul, Contributor to Harper's Magazine, The End of Oil: on the Edge of a Perilous New World, pg. 284-5

Politically, the energy poverty of the developing world will influence the transformation of the energy economy in important ways. Because developing nations currently have little choice but to use the cheapest energy available (coal, in China and India), they regard policies to reduce carbon emissions as undercutting their own efforts to escape energy poverty and to modernize. By the same token, because developing countries rely on “dirty” energy, any success they have in achieving economic growth will doom global efforts to shift to cleaner energy. This implicit threat gives developing nation a surprising measure of power over such global energy decisions as climate policy. Countries like China, India, and even Russia, with its obsolete and energy-intensive industrial base, will refuse to support global initiatives like CO2 reduction unless wealthy developed nations promise financial and technological aid. But developing countries will also become political pawns as industrialized nations – mainly the United States and Europe – maneuver for advantage on issues such as climate policy.

#### Renewables fail

Zehner 6/12Visiting scholar at the University of California, MS in Science and Technology Studies)(Ozzie Zehner, June 12, 2012, “Solar Cells and Wind Turbines Don't Offset Fossil Fuel Use, According to New Book, Green Illusions,” The Wall Street Journal, <http://www.marketwatch.com/story/solar-cells-and-wind-turbines-dont-offset-fossil-fuel-use-according-to-new-book-green-illusions-2012-06-12)//DR>. H

BERKELEY, Calif., June 12, 2012 /PRNewswire via COMTEX/ -- Renewable energy technologies *do not offset* fossil fuel use in the United States according to a new environmental book, Green Illusions (June 2012, University of Nebraska Press), by University of California - Berkeley visiting scholar Ozzie Zehner. In fact, building more solar cells and wind turbines could actually *accelerate* fossil fuel use unless nations take other steps to avoid a rebound effect. Many renewable energy researchers assume that building solar cells and wind farms will displace coal use and lower carbon dioxide levels. However, Zehner explains that subsidizing renewable energy merely expands energy supplies, which exerts a downward pressure on prices. Energy demand subsequently increases. "This brings us right back to where we started: high demand and so-called insufficient supply," says Zehner. "Historically, we've filled that added demand by building more coal-fired power plants, not fewer." "We create an energy boomerang," Zehner remarked during a recent PBS interview. "The harder we throw energy into the grid, the harder demand comes back to hit us on the head. More efficient solar cells, taller wind turbines, and advanced biofuels are all just ways of throwing harder."

#### Warming’s not anthropogenic

**Carter 2-8–** Robert, PhD, Adjuct Research Fellow, James Cook University, Craig Idso, PhD, Chairman at the Center for the Study of Carbon Dioxide and Global Change, Fred Singer, PhD, President of the Science and Environmental Policy Project, Susan Crockford, evolutionary biologist with a specialty in skeletal taxonomy , paleozoology and vertebrate evolution, Joseph D’Aleo, 30 years of experience in professional meteorology, former college professor of Meteorology at Lyndon State College, Indur Goklany, independent scholar, author, and co-editor of the Electronic Journal of Sustainable Development, Sherwood Idso, President of the Center for the Study of Carbon Dioxide and Global Change, Research Physicist with the US Department of Agriculture, Adjunct Professor in the Departments of Geology, Botany, and Microbiology at Arizona State University, Bachelor of Physics, Master of Science, and Doctor of Philosophy, all from the University of Minnesota, Madhav Khandekar, former research scientist from Environment Canada and is an expert reviewer for the IPCC 2007 Climate Change Panel, Anthony Lupo, Department Chair and Professor of Atmospheric Science at the University of Missouri, Willie Soon, astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, Mitch Taylor (Canada) (February 2012, “Eight Centuries of Climate Change in Northeast Spain” <http://www.nipccreport.org/articles/2012/feb/8feb2012a3.html>) Jacome

According to Morellon *et al*. (2011), "in the context of present-day global warming, there is increased interest in documenting climate variability during the last millennium," since "it is crucial to reconstruct pre-industrial conditions to discriminate anthropogenic components (i.e., greenhouse gases, land-use changes) from natural forcings (i.e., solar variability, volcanic emissions)."

Against this backdrop, Morellon *et al*. conducted a multi-proxy study of several short sediment cores they recovered from Lake Estanya (42°02'N, 0°32'E) in the Pre-Pyrenean Ranges of northeast Spain, which "provides a detailed record of the complex environmental, hydrological and anthropogenic interactions occurring in the area since medieval times." More specifically, they say that "the integration of sedimentary facies, elemental and isotopic geochemistry, and biological proxies (diatoms, chironomids and pollen), together with a robust chronological control, provided by AMS radiocarbon dating and 210Pb and 137Cs radiometric techniques, enabled precise reconstruction of the main phases of environmental change, associated with the Medieval Warm Period (MWP), the Little Ice Age (LIA) and the industrial era." And what did they find?

The thirteen researchers identified the MWP as occurring in their record from AD 1150 to 1300, noting that their pollen data reflect "warmer and drier conditions," in harmony with the higher temperatures of the Iberian Peninsula over the same time period that have been documented by Martinez-Cortizas *et al*. (1999), the higher temperatures of the Western Mediterranean region found by Taricco *et al*. (2008), and the global reconstructions of Crowley and Lowery (2000) and Osborn and Briffa (2006), which "clearly document warmer conditions from the twelfth to fourteenth centuries," which warmth, in the words of Morellon *et al*. is "likely related to increased solar irradiance (Bard *et al*., 2000), persistent La Niña-like tropical Pacific conditions, a warm phase of the Atlantic Multidecadal Oscillation, and a more frequent positive phase of the North Atlantic Oscillation (Seager *et al*., 2007)."

Following hard on the heels of the MWP, Morellon *et al*. note the occurrence of the LIA, which they recognize as occurring from AD 1300 to 1850. And here they report that, on the Iberian Peninsula, "lower temperatures (Martinez-Cortizas *et al*., 1999) characterize this period," which "coincided with colder North Atlantic (Bond *et al*., 2001) and Mediterranean sea surface temperatures (Taricco *et al*., 2008) and a phase of mountain glacier advance (Wanner *et al*., 2008)." And following the LIA they identify the transition period of AD 1850-2004 that takes the region into the Current Warm Period.

In discussing all three of these distinctive periods, they say that "a comparison of the main hydrological transitions during the last 800 years in Lake Estanya and solar irradiance (Bard *et al*., 2000) reveals that lower lake levels dominated during periods of enhanced solar activity (MWP and post-1850 AD) and higher lake levels during periods of diminished solar activity (LIA)." And *within* the LIA, they note that periods of higher lake levels or evidence of increased water balance occurred during the solar minima of Wolf (AD 1282-1342), Sporer (AD 1460-1550), Maunder (AD 1645-1715) and Dalton (AD 1790-1830).

In light of these several observations it would appear that the multi-centennial climate oscillation uncovered by Morellon *et al*. has been driven by a similar oscillation in solar activity, as well as by multi-decadal solar activity *fluctuations* superimposed upon that longer-period *oscillation*. And these relationships suggest that **there is no compelling need to attribute 20th-century global warming to the concomitant increase in the air's CO2 content**. **Natural variability appears** quite **capable of explaining it all.**

#### Warming’s irreversible

**Solomon et al ‘10** Susan Solomon et. Al, Chemical Sciences Division, Earth System Research Laboratory, National Oceanic and Atmospheric Administration, Ph.D. in Climotology University of California, Berkeley, Nobel Peace Prize Winner, Chairman of the IPCC, Gian-Kasper Plattner, Deputy Head, Director of Science, Technical Support Unit Working Group I, Intergovernmental Panel on Climate Change Affiliated Scientist, Climate and Environmental Physics, Physics Institute, University of Bern, Switzerland, John S. Daniel, research scientist at the National Oceanic and Atmospheric Administration (NOAA), Ph.D. in physics from the University of Michigan, Ann Arbor, Todd J. Sanford, Cooperative Institute for Research in Environmental Science, University of Colorado Daniel M. Murphy, Chemical Sciences Division, Earth System Research Laboratory, National Oceanic and Atmospheric Administration, Boulder Gian-Kasper Plattner, Deputy Head, Director of Science, Technical Support Unit Working Group I, Intergovernmental Panel on Climate Change, Affiliated Scientist, Climate and Environmental Physics, Physics Institute, University of Bern, Switzerland Reto Knutti, Institute for Atmospheric and Climate Science, Eidgenössiche Technische Hochschule Zurich and Pierre Friedlingstein, Chair, Mathematical Modelling of Climate Systems, member of the Science Steering Committee of the Analysis Integration and Modeling of the Earth System (AIMES) programme of IGBP and of the Global Carbon Project (GCP) of the Earth System Science Partnership (ESSP) (Proceedings of the National Academy of the Sciences of the United States of America, "Persistence of climate changes due to a range of greenhouse gases", October 26, 2010 Vol 107.43: 18354-18359)

Carbon dioxide, methane, nitrous oxide, and other greenhouse gases increased over the course of the 20th century due to human activities. The human-caused increases in these gases are the primary forcing that accounts for much of the global warming of the past fifty years, with carbon dioxide being the most important single radiative forcing agent (1). Recent studies have shown that the human-caused warming linked to carbon dioxide is nearly irreversible for more than 1,000 y, even if emissions of the gas were to cease entirely (2–5). The importance of the ocean in taking up heat and slowing the response of the climate system to radiative forcing changes has been noted in many studies (e.g., refs. 6 and 7). The key role of the ocean’s thermal lag has also been highlighted by recent approaches to proposed metrics for comparing the warming of different greenhouse gases (8, 9). Among the observations attesting to the importance of these effects are those showing that climate changes caused by transient volcanic aerosol loading persist for more than 5 y (7, 10), and a portion can be expected to last more than a century in the ocean (11–13); clearly these signals persist far longer than the radiative forcing decay timescale of about 12–18 mo for the volcanic aerosol (14, 15). Thus the observed climate response to volcanic events suggests that some persistence of climate change should be expected even for quite short-lived radiative forcing perturbations. It follows that the climate changes induced by short-lived anthropogenic greenhouse gases such as methane or hydrofluorocarbons (HFCs) may not decrease in concert with decreases in concentration if the anthropogenic emissions of those gases were to be eliminated. In this paper, our primary goal is to show how different processes and timescales contribute to determining how long the climate changes due to various greenhouse gases could be expected to remain if anthropogenic emissions were to cease. Advances in modeling have led to improved AtmosphereOcean General Circulation Models (AOGCMs) as well as to Earth Models of Intermediate Complexity (EMICs). Although a detailed representation of the climate system changes on regional scales can only be provided by AOGCMs, the simpler EMICs have been shown to be useful, particularly to examine phenomena on a global average basis. In this work, we use the Bern 2.5CC EMIC (see Materials and Methods and SI Text), which has been extensively intercompared to other EMICs and to complex AOGCMs (3, 4). It should be noted that, although the Bern 2.5CC EMIC includes a representation of the surface and deep ocean, it does not include processes such as ice sheet losses or changes in the Earth’s albedo linked to evolution of vegetation. However, it is noteworthy that this EMIC, although parameterized and simplified, includes 14 levels in the ocean; further, its global ocean heat uptake and climate sensitivity are near the mean of available complex models, and its computed timescales for uptake of tracers into the ocean have been shown to compare well to observations (16). A recent study (17) explored the response of one AOGCM to a sudden stop of all forcing, and the Bern 2.5CC EMIC shows broad similarities in computed warming to that study (see Fig. S1), although there are also differences in detail. The climate sensitivity (which characterizes the long-term absolute warming response to a doubling of atmospheric carbon dioxide concentrations) is 3 °C for the model used here. Our results should be considered illustrative and exploratory rather than fully quantitative given the limitations of the EMIC and the uncertainties in climate sensitivity. Results One Illustrative Scenario to 2050. In the absence of mitigation policy, concentrations of the three major greenhouse gases, carbon dioxide, methane, and nitrous oxide can be expected to increase in this century. If emissions were to cease, anthropogenic CO2 would be removed from the atmosphere by a series of processes operating at different timescales (18). Over timescales of decades, both the land and upper ocean are important sinks. Over centuries to millennia, deep oceanic processes become dominant and are controlled by relatively well-understood physics and chemistry that provide broad consistency across models (see, for example, Fig. S2 showing how the removal of a pulse of carbon compares across a range of models). About 20% of the emitted anthropogenic carbon **remains in the atmosphere for** many **thousands of years** (with a range across models including the Bern 2.5CC model being about 19 4% at year 1000 after a pulse emission; see ref. 19), until much slower weathering processes affect the carbonate balance in the ocean (e.g., ref. 18). Models with stronger carbon/climate feedbacks than the one considered here could display larger and more persistent warmings due to both CO2 and non-CO2 greenhouse gases, through reduced land and ocean uptake of carbon in a warmer world. Here our focus is not on the strength of carbon/climate feedbacks that can lead to differences in the carbon concentration decay, but rather on the factors that control the climate response to a given decay. The removal processes of other anthropogenic gases including methane and nitrous oxide are much more simply described by exponential decay constants of about 10 and 114 y, respectively (1), due mainly to known chemical reactions in the atmosphere. In this illustrative study, we do not include the feedback of changes in methane upon its own lifetime (20). We also do not account for potential interactions between CO2 and other gases, such as the production of carbon dioxide from methane oxidation (21), or changes to the carbon cycle through, e.g., methane/ozone chemistry (22). Fig. 1 shows the computed future global warming contributions for carbon dioxide, methane, and nitrous oxide for a midrange scenario (23) of projected future anthropogenic emissions of these gases to 2050. Radiative forcings for all three of these gases, and their spectral overlaps, are represented in this work using the expressions assessed in ref. 24. In 2050, the anthropogenic emissions are stopped entirely for illustration purposes. The figure shows nearly irreversible warming for at least 1,000 y due to the imposed carbon dioxide increases, as in previous work. **All published studies to date**, which use multiple EMICs and one AOGCM, show largely irreversible warming due to future carbon dioxide increases (to within about 0.5 °C) on a timescale of at least 1,000 y (3–5, 25, 26). Fig. 1 shows that the calculated future warmings due to anthropogenic CH4 and N2O also persist notably longer than the lifetimes of these gases. The figure illustrates that emissions of key non-CO2 greenhouse gases such as CH4 or N2O could lead to warming that both temporarily exceeds a given stabilization target (e.g., 2 °C as proposed by the G8 group of nations and in the Copenhagen goals) and remains present longer than the gas lifetimes even if emissions were to cease. A number of recent studies have underscored the important point that reductions of non-CO2 greenhouse gas emissions are an approach that can indeed reverse some past climate changes (e.g., ref. 27). Understanding how quickly such reversal could happen and why is an important policy and science question. Fig. 1 implies that the use of policy measures to reduce emissions of short-lived gases will be less effective as a rapid climate mitigation strategy than would be thought if based only upon the gas lifetime. Fig. 2 illustrates the factors influencing the warming contributions of each gas for the test case in Fig. 1 in more detail, by showing normalized values (relative to one at their peaks) of the warming along with the radiative forcings and concentrations of CO2 , N2O, and CH4 . For example, about two-thirds of the calculated warming due to N2O is still present 114 y (one atmospheric lifetime) after emissions are halted, despite the fact that its excess concentration and associated radiative forcing at that time has dropped to about one-third of the peak value.

#### No extinction – empirically denied

**Carter 11–** Robert, PhD, Adjuct Research Fellow, James Cook University, Craig Idso, PhD, Chairman at the Center for the Study of Carbon Dioxide and Global Change, Fred Singer, PhD, President of the Science and Environmental Policy Project, Susan Crockford, evolutionary biologist with a specialty in skeletal taxonomy , paleozoology and vertebrate evolution, Joseph D’Aleo, 30 years of experience in professional meteorology, former college professor of Meteorology at Lyndon State College, Indur Goklany, independent scholar, author, and co-editor of the Electronic Journal of Sustainable Development, Sherwood Idso, President of the Center for the Study of Carbon Dioxide and Global Change, Research Physicist with the US Department of Agriculture, Adjunct Professor in the Departments of Geology, Botany, and Microbiology at Arizona State University, Bachelor of Physics, Master of Science, and Doctor of Philosophy, all from the University of Minnesota, Madhav Khandekar, former research scientist from Environment Canada and is an expert reviewer for the IPCC 2007 Climate Change Panel, Anthony Lupo, Department Chair and Professor of Atmospheric Science at the University of Missouri, Willie Soon, astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, Mitch Taylor (Canada) (March 8th, “[Surviving](file:///C:\Users\Marc\Desktop\Surviving) the Unpreceented Climate Change of the IPCC” <http://www.nipccreport.org/articles/2011/mar/8mar2011a5.html>) Jacome

On the other hand, they indicate that some biologists and climatologists have pointed out that "many of the predicted increases in climate have happened before, in terms of both magnitude and rate of change (e.g. Royer, 2008; Zachos *et al*., 2008), and yet biotic communities have remained remarkably resilient (Mayle and Power, 2008) and in some cases thrived (Svenning and Condit, 2008)." But they report that those who mention these things are often "placed in the 'climate-change denier' category," although the purpose for pointing out these facts is simply to present "a sound scientific basis for understanding biotic responses to the magnitudes and rates of climate change predicted for the future through using the vast data resource that we can exploit in fossil records." Going on to do just that, Willis *et al*. focus on "intervals in time in the fossil record when atmospheric CO2 concentrations increased up to 1200 ppm, temperatures in mid- to high-latitudes increased by greater than 4°C within 60 years, and sea levels rose by up to 3 m higher than present," describing studies of past biotic responses that indicate "the scale and impact of the magnitude and rate of such climate changes on biodiversity." And what emerges from those studies, as they describe it, "is evidence for rapid community turnover, migrations, development of novel ecosystems and thresholds from one stable ecosystem state to another." And, most importantly in this regard, they report "there is very little evidence for broad-scale extinctions due to a warming world." In concluding, the Norwegian, Swedish and UK researchers say that "based on such evidence we urge some caution in assuming broad-scale extinctions of species will occur due solely to climate changes of the magnitude and rate predicted for the next century," reiterating that "the fossil record indicates remarkable biotic resilience to wide amplitude fluctuations in climate.

#### Resource wars won’t escalate to great power conflict

**Dombrowski 4** – associate professor, US Naval War College's Strategic Research Department (Peter, Naval War College Review, http://findarticles.com/p/articles/mi\_m0JIW/is\_1\_57/ai\_113755359/print)

Unfortunately, Klare barely pauses to consider the possibility that diplomatic, economic, and political developments might ease potential resource conflicts before they escalate into armed conflicts. After all, countries fighting over access to water or oil could simply negotiate arrangements or allow market forces to dictate outcomes; the author himself notes examples and cases where diplomatic solutions have succeeded in the past. In fact, the absence of economic reasoning in this book is startling. After all, economists from cranks to countless mainstream professionals have demonstrated how market forces can help manage the worst aspects of resource shortages. Thus energy shortages that lead to price increases in turn encourage consumers to conserve; consumption is reduced, as well as overall dependence. Hence, despite tremendous economic growth, Western Europe, Japan, and even the United States have become much more energy efficient since the oil shock of the 1970s. Substitution effects are also possible, although perhaps not for a resource as fundamental and elemental as water.

#### No risk of resource wars

**Pinker 11**—Harvard College Professor, Johnstone Family Professor in the Department of Psychology at Harvard University (Steven, © 2011, The Better Angels of our Nature: Why Violence has Declined, RBatra)

Once again it seems to me that the appropriate response is “maybe, but maybe not.” Though climate change can cause plenty of misery and deserves to be mitigated for that reason alone, **it will not necessarily lead to armed conflict**. The political scientists who track war and peace, such as Halvard Buhaug, Idean Salehyan, Ole Theisen, and Nils Gleditsch, are skeptical of the popular idea that people fight wars over scarce resources.290 Hunger and resource shortages are tragically common in sub-Saharan countries such as Malawi, Zambia, and Tanzania, but wars involving them are not. Hurricanes, floods, droughts, and tsunamis (such as the disastrous one in the Indian Ocean in 2004) do not generally lead to armed conflict. The American dust bowl in the 1930s, to take another example, caused plenty of deprivation but no civil war. And while temperatures have been rising steadily in Africa during the past fifteen years, civil wars and war deaths have been falling. Pressures on access to land and water can certainly cause **local skirmishes, but a genuine war requires that hostile forces be organized and armed**, and that depends more on the influence of bad governments, closed economies, and militant ideologies than on the sheer availability of land and water. Certainly any connection to terrorism is in the imagination of the terror warriors: terrorists tend to be underemployed lower-middle-class men, not subsistence farmers.291 As for genocide, the Sudanese government finds it convenient to blame violence in Darfur on desertification, distracting the world from its own role in tolerating or encouraging the ethnic cleansing.

In a regression analysis on armed conflicts from 1980 to 1992, Theisen found that conflict was more likely if a country was poor, populous, politically unstable, and abundant in oil, but not if it had suffered from droughts, water shortages, or mild land degradation. (Severe land degradation did have a small effect.) Reviewing analyses that examined a large number (N) of countries **rather than cherry-picking one or two**, he concluded, “**Those who foresee doom, because of the relationship between resource scarcity and violent internal conflict, have very little support in the large-N literature**.” Salehyan adds that relatively inexpensive advances in water use and agricultural practices in the developing world can yield massive increases in productivity with a constant or even shrinking amount of land, and that better governance can mitigate the human costs of environmental damage, as it does in developed democracies. Since the state of the environment is at most one ingredient in a mixture that depends far more on political and social organization, resource wars are far from inevitable, even in a climate-changed world.

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#### No natural gas price spikes

Lior Cohen (MA graduate in Economics, worked for several years in a variety of economic related positions) August 20, 2012 “Will Natural Gas Fall Below $2.50?” <http://seekingalpha.com/article/817181-will-natural-gas-fall-below-2-50>

Last week, natural gas prices continued their downward trend. The prices of natural gas declined despite the low injection to storage and the continuous hotter-than-normal weather. Will prices continue to fall in the following weeks? Let's examine the recent developments in natural gas markets to try and answer this question. During the past week, the price of Henry Hub (spot) declined by 4.6%, the future price (short-term delivery) also decreased by 1.8%, and United States Natural Gas (UNG) price decreased by 1.6%. The recent fall of natural gas prices may have also contributed to the recent decline of natural gas and oil producer stocks such as Exxon Mobil (XOM). The chart blow shows the rise and fall of the Henry Hub spot and future (short-term delivery) prices during recent weeks. Supply From the supply side, the gross natural gas production rose by 0.2% during last week; it was 2.4% above the production level in 2011. Imports from Canada, on the other hand, decreased by 4.4% (week over week), and the imports were also 5.6% below the imports recorded during the same week in 2011. The total U.S. natural gas supply declined on a weekly scale by 0.4%. Finally, the natural gas rotary rig count decreased by three and settled at 495 rigs. Therefore, the NG supply contracted again during last week. Storage Natural gas injection to the underground natural gas storage was only 20 Bcf, which was much lower to the injection during the parallel week in 2011 -- it was back then 50 Bcf. Furthermore, the injection was also 20 Bcf lower than the five-year average injection. The current storage is at 3,261 Bcf for all lower 48 states, which is still nearly 12.5% above the five-year average. The difference between the current storage levels and five-year average storage continues to contract; at the current rate the difference could nullify, based on my rough estimate, around October 2012. The table below shows my crude estimate based on the gaps between recent injections and five-year injections. Demand According to the EIA, during last week the average U.S. NG consumption declined 2.7%. The power sector led the fall with a 6.8% drop (week over week). Alternatively, many other sectors' demand, such as residential/commercial sectors, increased during last week. The total demand for NG decreased by 2.4% compared with the previous week's levels; it was 4.2% above the demand during the parallel week in 2011. Both the natural gas supply and demand moderately declined during last week, and it seems that the supply declined by a lower pace than the demand. Thus, the natural gas market has loosened a bit compared to its condition a week earlier. Warmer Than Normal Weather Subsides The weather remains warmer than normal, but was less hot than in July. According the EIA, July was the third hottest month on record. This extreme heat increased the demand for natural gas consumption in the power sector -- there was a rise in air conditioning usage. But since then the heat has subsided and is expected to continue in the weeks to follow. During the past week, the U.S. temperatures (on a national level) were higher by 3.1 degrees than the 30-year normal temperature and only 0.4 degrees warmer than the same week in 2011. Seasonality Natural gas prices tend to decrease during August: The Henry Hub spot price declined by 8.9% during August 2011, by nearly 16.6% during August 2010, by 39.1% during August 2009, and by 17.7% during August 2009. Up until now, this strong seasonality effect seemed to take place this year as well. This downward trend could continue in the following weeks. So what does it mean for the natural gas market? Based on the recent developments in the natural gas demand and supply, it seems the natural gas market has loosened. The demand for natural declined by a higher rate than the supply did; the weather cooled down a bit and contributed to the decline in demand. The seasonality effect along with the expectations of another drop in temperatures could suggest the pressures from the demand side will subside further. This may result in another decrease in natural gas prices in the next couple of weeks. On the other hand, the decline in supply is likely to keep natural gas from tumbling down. The natural gas rig count continues to fall, as the injections are still well below last year and the five-year average injections. The bottom line is that natural gas will likely continue to dwindle -- but not by much -- as the weather cools down and the demand for natural gas falls.

#### Ag is sustainable—new methods check

**Avery 3** (Alex Avery, National Agricultural Aviators Association, Center for Global Food Issues, 12/11/2003)

21st Century Human Society is the Most Sustainable Ever

Roman citizens worried about soil erosion and declining farm yields nearly two thousand years ago. They had good reason to worry. Soil erosion has always been the most vulnerable aspect of human society. Fortunately, modern farmers have invented conservation tillage, which cuts erosion by up to 90 percent and encourages far more earthworms and subsoil bacteria. Organic farmers refuse to use conservation tillage, because it relies on herbicides to control weeds; thus the organic farmers are forced to used bare-earth, erosion-inviting weed control techniques like plowing and hoeing. Plowing also destroys the feeding tubes of the mychorrizal fungi which produce the most important element of soil health: a recently-discovered gooey glycoprotein called glomalin. (Again, organic farmers fail to support their claims of better soil health.) Thanks to the combination of industrial fertilizer and conservation tillage, a highly erodable farming area in Wisconsin is today suffering only 6 percent as much erosion as it did during the Dust Bowl days of the 1930s. The author of that study says those who claim high rates of U.S. soil erosion today “owe us the physical evidence.” We are creating topsoil faster than we are losing it on millions of hectares across America, Canada, Europe, Latin America, Australia, and most recently, in Asia.

#### No econ impact

Robert Jervis 11, Professor in the Department of Political Science and School of International and Public Affairs at Columbia University, December 2011, “Force in Our Times,” Survival, Vol. 25, No. 4, p. 403-425

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy and bring back old-fashioned beggar-my-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a preexisting high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

### Adv 2

#### Distributed generation without grid improvement undermines grid reliability

Douglas Holtz-Eakin, Director of the Congressional Budget Office, 2003 [“Prospects for Distributed Electricity Generation.” Congressional Budget Office. September 2003. ttp:// www.cbo.gov/doc.cfm?index=4552&type= 0&sequence=0]

Threats to the Performance of Electric Systems Without adequate upgrades to the electricity supply network, widespread adoption of distributed generation could adversely affect regional electricity distribution systems. For example, with many customers switching their generators on and off, the quality of the power and the reliability of the systems could be degraded. Moreover, because utilities could have difficulty pinpointing the sources of the degradation, they might not be able to allocate to the owners of distributed generators the costs of preventive actions. It may be difficult to develop economically sound policies on how to pay for any required upgrades in the utility infrastructure to protect against those risks. Experts generally agree that the current risks to the distribution system from the parallel operation of small generators, representing only a small fraction of a local distribution network's capacity, are usually manageable.(12) But the cumulative effects of many generators would be another matter. The utility network might require significant upgrades and additional protective devices to manage distributed generators that could use a large fraction of the local distribution network's capacity.

#### Distributed generation can’t solve – multiple technical and civic barriers

Christopher **Flavin**, Researcher at the Worldwatch Institute **2001** [State of the World 2000 ed by L Brown. Cha 7 “Sizing up Micropower” http://www.worldwatch.org/node/1039

Additional policies are required to prevent utilities from unfairly blocking micropower development. Rules preventing access to the network must be rewritten, and utilities should be required to offer straightforward “power purchase” contracts for micropower systems, rather than discouraging them with unnecessarily dense legal documents. Additional fees, used by utilities to penalize customers who reduce their purchases of grid power, need to be minimized. The state of Massachusetts, for example, has reduced “stranded cost” charges, which fund the retirement of uneconomic plants, for customers who use on-site systems.60 Other obstacles to micropower stem from siting, permitting, and emissions regulations that were designed before micropower became an option. Small-scale electricity is not accounted for in most building, electrical, and safety regulations, nor do local code and zoning officials tend to be familiar with the technology. U.S. homeowner associations concerned about lower property values often retain restrictions on modifications—such as solar roofing— well after developments have been finished. Land use planning and zoning laws favor the right to build over the “solar access” of neighboring property owners. Environmental regulations in many nations need to be revamped to credit the reduced pollution that results from deploying efficient small-scale systems.61

#### Cyberterror unlikely – terrorists are not tech-savvy and doesn’t have shock value

**Conway 11** – Lecturer in International Relations in the School of Law & Government at Dublin City University (Maura, “Against Cyberterrorism” Communications of the ACM, Vol. 54 No. 2, Pages 26-28, http://cacm.acm.org.proxy.lib.umich.edu/magazines/2011/2/104396-against-cyberterrorism/fulltext)

In my opinion, the three most compelling arguments against cyberterrorism are: The argument of Technological Complexity; The argument regarding 9/11 and the Image Factor; and The argument regarding 9/11 and the Accident Issue. The first argument is treated in the academic literature; the second and third arguments are not, but ought to be. None of these are angles to which journalists appear to have devoted a lot of thought or given adequate consideration. In the speech mentioned earlier, FBI Director Mueller observed "Terrorists have shown a clear interest in pursuing hacking skills. And they will either train their own recruits or hire outsiders, with an eye toward combining physical attacks with cyber attacks." That may very well be true, but the argument from Technological Complexity underlines that 'wanting' to do something is quite different from having the ability to do the same. Here's why: Violent jihadis' IT knowledge is not superior. For example, in research carried out in 2007, it was found that of a random sampling of 404 members of violent Islamist groups, 196 (48.5%) had a higher education, with information about subject areas available for 178 individuals. Of these 178, some 8 (4.5%) had trained in computing, which means that out of the entire sample, less than 2% of the jihadis came from a computing background.3 And not even these few could be assumed to have mastery of the complex systems necessary to carry out a successful cyberterrorist attack. Real-world attacks are difficult enough. What are often viewed as relatively unsophisticated real-world attacks undertaken by highly educated individuals are routinely unsuccessful. One only has to consider the failed car bomb attacks planned and carried out by medical doctors in central London and at Glasgow airport in June 2007. Hiring hackers would compromise operational security. The only remaining option is to retain "outsiders" to undertake such an attack. This is very operationally risky. It would force the terrorists to operate outside their own circles and thus leave them ripe for infiltration. Even if they successfully got in contact with "real" hackers, they would be in no position to gauge their competency accurately; they would simply have to trust in same. This would be very risky. So on the basis of technical know-how alone cyberterror attack is not imminent, but this is not the only factor one must take into account. The events of Sept. 11, 2001 underscore that for a true terrorist event spectacular moving images are crucial. The attacks on the World Trade Center were a fantastic piece of performance violence; look back on any recent roundup of the decade and mention of 9/11 will not just be prominent, but pictures will always be provided. The problem with respect to cyber-terrorism is that many of the attack scenarios put forward, from shutting down the electric power grid to contaminating a major water supply, fail on this account: they are unlikely to have easily captured, spectacular (live, moving) images associated with them, something we—as an audience—have been primed for by the attack on the World Trade Center on 9/11. The only cyberterrorism scenario that would fall into this category is interfering with air traffic control systems to crash planes, but haven't we seen that planes can much more easily be employed in spectacular "real-world" terrorism? And besides, aren't all the infrastructures just mentioned much easier and more spectacular to simply blow up? It doesn't end there, however. For me, the third argument against cyberterrorism is perhaps the most compelling; yet it is very rarely mentioned.

#### New innovations prevent effective attacks Defence 3/7 (Professionals “Northrop Grumman to Strengthen Cybersecurity Across DoD, Intelligence Community Networks”, March 7, 2012, <http://www.defpro.com/news/details/33128/?SID=7f444f34ab67144a57b4fa652f201ebf>, ZBurdette)

Northrop Grumman Corporation has been awarded a cybersecurity task order by the Defense Information Systems Agency (DISA) to strengthen cybersecurity protections across all U.S. Department of Defense (DoD) and Intelligence Community networks by implementing the Host Based Security System (HBSS) as part of the DoD Information Assurance and Computer Network Defense contract.

The task order was competitively awarded under the Encore 2 contract vehicle and is valued at $189 million over a three-year base period with two one-year options. As prime integrator, Northrop Grumman will provide software license maintenance support, training, help desk and architectural infrastructure support personnel.

"Cybersecurity is one of Northrop Grumman's four core businesses due to its vital role in our nation's defense," said Karen Williams, vice president of Northrop Grumman's Defense Technologies Division. "The HBSS award reinforces Northrop Grumman's position as a top provider of defense-in-depth cybersecurity solutions across the DoD and intelligence domains."

HBSS is the DoD's commercial-off-the-shelf suite of automated and standardized software used to provide enhanced host based security – security on desktops and laptops versus at the boundary such as routers and switches – against both inside and external threats.

In October 2007, DoD mandated HBSS for eventual installation on all unclassified and classified networks. Full implementation of HBSS is critical to defending government networks from an increasing number of sophisticated cyber attacks. HBSS provides system administrators significant improvements in situational awareness and drastically reduces or **eliminates the effectiveness of cyber attacks,** **ensuring vital network capabilities** are available to warfighters.

"Our Northrop Grumman team brings a wealth of cybersecurity integration experience and capabilities to help ensure that all five million end-points are protected across the DoD and intelligence community," said Sam Abbate,

#### No meltdown impact—Back up power also checks blackouts Wald 7/30/11 [Matthew L Wald, on energy for the New York Times toured more than two dozen power reactors, He holds a B.A. in urban studies from Brown University <http://www.nytimes.com/2011/07/30/science/earth/30radiation.html>, “N.R.C. Lowers Estimate of How Many Would Die in Meltdown” nkj] ROCKVILLE, Md. — The Nuclear Regulatory Commission is approaching completion of an ambitious study that concludes that a meltdown at a typical American reactor would lead to far fewer deaths than previously assumed.

The conclusion, to be published in April after six years of work, is based largely on a radical revision of projections of how much and how quickly cesium 137, a radioactive material that is created when uranium is split, could escape from a nuclear plant after a core meltdown. In past studies, researchers estimated that 60 percent of a reactor core’s cesium inventory could escape; the new estimate is only 1 to 2 percent.

A draft version of the report was provided to The New York Times by the Union of Concerned Scientists, a nuclear watchdog group that has long been critical of the commission’s risk assessments and obtained it through a Freedom of Information Act request. Since the recent triple meltdown at the Fukushima Daiichi nuclear plant in Japan, such groups have been arguing that the commission urgently needs to tighten safeguards for new and aging plants in the United States.

The report is a synthesis of 20 years of computer studies and engineering analyses, stated in complex mathematical terms. In essence, it states that if a prolonged loss of electric power caused a typical American reactor core to melt down, the great bulk of the radioactive material released would remain inside the building even when the reactor’s containment shell was breached.

Big releases of radioactive material would not be immediate, and people within a 10-mile radius would have enough time to evacuate, the study found. The chance of a death from acute radiation exposure within 10 miles is therefore near zero, the study projects, although some people would receive doses high enough to cause fatal cancers in decades to come.

One person in every 4,348 living within 10 miles would be expected to develop a “latent cancer” as a result of radiation exposure, compared with one in 167 in previous estimates.

“Accidents progress more slowly, in some cases much more slowly, than previously assumed,” Charles G. Tinkler, a senior adviser for research on severe accidents and one of the study’s authors, said in an interview at a commission office building here. “Releases are smaller, and in some cases much smaller, of certain key radioactive materials.”

The N.R.C. did not intend to release the report until next spring and said its conclusions were still being adjusted after a peer review.

The health effects of a catastrophic meltdown were hypothetical until the 1979 accident at Three Mile Island. That destroyed a billion-dollar reactor but caused no apparent physical harm to nearby residents, immediately or over time. Debate has persisted over whether the United States skirted a disaster or whether that accident was about as bad as it could get.

Edwin Lyman, a nuclear physicist with the Union of Concerned Scientists, contends that the nuclear commission has consistently painted an overly rosy picture and that its latest study does as well. He noted that the study assumed a successful evacuation of 99.5 percent of the people within 10 miles, for example. The report also assumes “average” weather conditions, he noted.

But if a rainstorm were under way during a release of radioactive materials, he said, it could wash contaminants out of the air into a small area, producing a high dose there.

Jennifer L. Uhle, the deputy director of the commission’s office of nuclear regulatory research, said the report was intended to present the “best estimate” and not the worst case.

Dr. Lyman said the earlier estimate was of a different accident, a major pipe break. The new study considered that accident too unlikely to analyze.

Dr. Lyman suggested that in projections of fatal cancer cases, the focus should be on people who live within 50 miles. The average population within 10 miles of an American nuclear plant is 62,000; within 50 miles, it is about five million.

The commission’s old projection of eventual cancer deaths was one for every 2,128 people exposed within 50 miles; the new study projects one cancer death for every 6,250 people exposed, which still comes to hundreds of cancer deaths within the 50-mile circle, in addition to the hundreds of thousands who would be expected to die of cancer from other causes.

Dr. Lyman countered that when dealing with estimates based on so many variables — including more than 100 reactors of different designs and vintage, in areas with disparate population densities — a difference of a factor of three is not important. In his view, the study reconfirms that reactors pose serious risks.

The commission’s shift in thinking about how much radioactive cesium 137 would escape after a core meltdown is based on a conclusion that most of it would either dissolve in water that stays put or adhere to surfaces within the plant. The authors said previous analyses had made “conservative assumptions” that most of the cesium and other materials would escape. But laboratory studies and computer modeling have not borne out that hypothesis, they said.

Commission experts have said that a total blackout would be extremely rare at an American plant and that backup generators and other machinery would fill the breach until grid power was restored. Nonetheless, the study focused on what would happen in the event of a nuclear station blackout, meaning a complete loss of power from the grid and from backup diesel generators, and then an exhaustion of batteries that supply power, leading to a meltdown. That is what happened at Fukushima.

The study focused on two common reactor types in this country: boiling-water reactors at the Peach Bottom Atomic Power Station in Pennsylvania, similar to those at Fukushima, and pressurized-water reactors at the Surry Power Station in Virginia.

The study gives a highly detailed prediction of which equipment would stop operating; what temperatures, steam pressures and flows of water and steam would result; and where and when leaks would begin after a meltdown.

It concluded that Peach Bottom would not release enough radioactive material to kill anyone immediately, although it could increase the rate of cancer deaths over future decades. At Surry, the probability was so low and the number of people living within 10 miles so small that the death toll would be a fraction of a person.

The report was prepared by staff members of the Nuclear Regulatory Commission and Sandia National Laboratories, a Department of Energy lab. Beyond the revisions to be made as a result of the peer review, the report could undergo further changes after public comments are received next year.

Once completed, it might be used by the commission when it analyzes proposed safety improvements in terms of costs and benefits, or decides where reactors should be located.

“Once we think we know what the best estimate is, we think we can start thinking about applications,” said Jason H. Schaperow, a senior reactor systems engineer and one of the authors..

## 2nc elections

### Elections OV

#### Romney will gut federal support for renewable energy

**Wood, 9/6**/12 – AOL Energy (Elisa, “Renewable Energy: More, Less or the Same under Obama or Romney?,”

http://energy.aol.com/2012/09/06/renewable-energy-more-less-or-the-same-under-obama-or-romney/)

For renewable energy, the 2012 presidential race reveals the downside of being championed.

President Barack Obama channeled a historic amount of money into green energy in his first term and made it a centerpiece of his jobs platform. As a result, renewable energy is big target for those taking aim at Obama.

"Because the Obama White House has made renewable energy an important part of the focus, it has become important for the other side to beat it up," said Arno Harris, CEO of Recurrent Energy and board chairman of the Solar Energy Industries Association.

The brawl is at times colorful with quips from both sides about powering cars with windmills – or maybe dogs – on their roofs. Romney's jabbed that Obama thinks he can turn back the rising oceans. And 'Solyndra' has become the 'Halliburton' of this election: a single company name that one party uses to try to encapsulate all they see wrong with the other.

Jokes and hyperbole aside, how far apart are Romney and Obama on renewables?

"There is a real difference in policy," said Andrew Holland, senior fellow for energy and climate at the American Security Project. "Romney, and now Paul Ryan [Romney's vice presidential running mate], are quite anti-renewable energy."

Romney hasn't abandoned renewable energy. But he's also not pursuing it with the same "purposefulness," according to Dan Berwick, director of policy and business development at Borrego Solar.

To Incentivize or not to Incentivize?

In his nomination acceptance at the Republican National Convention, Romney included renewables in the list of energy resources North America must take "full advantage of" to reach energy independence. However, Romney promotes few of the market incentives the industry now enjoys. He describes a more narrow federal role, one where funding goes to basic research.

#### Romney win would collapse the economy

Robert Reich 8-20-2012; Chancellor’s Professor of Public Policy at the Goldman School of Public Policy at the University of California at Berkeley. The Ryan-Romney Economic Plan Would Be A Disaster For America http://www.businessinsider.com/the-five-reasons-why-the-ryan-romney-economic-plan-would-be-a-2012-8

Mitt Romney hasn’t provided details so we should be grateful he’s selected as vice president a man with a detailed plan Romney says is “marvelous,” “bold and exciting,” “excellent,” “much needed,” and “consistent with” what he’s put out. So let’s look at the five basic features of this “marvelous” Ryan plan. FIRST: It would boost unemployment because it slashes public spending next year and the year after, when the economy is still likely to need a boost, not a fiscal drag. It would be the same austerity trap now throwing Europe into recession. According to the Economic Policy Institute, Ryan’s plan would mean 1.3 million fewer jobs next year than otherwise, and 2.8 million fewer the year after. SECOND: Ryan would take from lower-income Americans and give to the rich – who already have the biggest share of America’s total income and wealth in almost a century. His plan would raise taxes on families earning between 30 and 40 thousand dollars by almost $500 a year, and slash programs like Medicare, food stamps, and children’s health What would Ryan do with these savings? Reduce taxes on millionaires by an average of over $500,000 a year. THIRD: Ryan wants to turn Medicare into vouchers that won’t keep up with the rising costs of health care – thereby shifting the burden onto seniors. By contrast, Obama’s Affordable Care Act saves money on Medicare by reducing payments to medical providers like hospitals and drug companies. FOURTH: He wants to add money to defense while cutting spending on education, infrastructure, and basic research and development. America already spends more on defense than the next five biggest military spenders put together. Our future productivity depends on the public investments Ryan wants to cut. FIFTH: And finally, Ryan’s budget doesn’t even reduce the federal budget deficit – not for decades. Remember: He’s adding to military spending, giving huge additional tax cuts to the very rich, and stifling economic growth by cutting spending too early. The Center for Budget and Policy Priorities estimates Ryan’s Roadmap would push public debt to over 175 percent of GDP by 2050. So there you have it. The Ryan – Ryan-ROMNEY – economic plan. And the five reasons why it would be a disaster for America.

#### Romney defunds your plan, yo

**ETF, 9/13/12** (ETF Daily News, 13 September 2012, “Why Mitt Romney As President Could Destroy Alternative Energy Investing (TAN, FSLR, TSL, UNG, USO),” http://etfdailynews.com/2012/09/13/why-mitt-romney-as-president-could-destroy-alternative-energy-investing-tan-fslr-tsl-ung-uso/)//CC

One of the biggest attacks on Romney’s plan comes from the fact that he does not appear to be very environmentally conscious. “The word climate does not appear in the energy plan. That is a conspicuous absence” says Michael Levi of the Council on Foreign Relations in New York. Romney seems to have little in the way of climate policies to combat some of the more aggressive oil policies, like green lighting the Keystone XL Pipeline despite it travelling through one of the largest aquifers on the face of the earth. Romney’s plan is to increase burning fossil fuels which will do little to combat climate change (it in fact will be bad news for climate change management). Of course, the biggest threat that investors need to worry about is the pulling of funds from some of the biggest names in green energy. Without government subsidies, many alternative energy companies will have trouble funding as well as breaking even. Though green energy may be better for the environment, the fact remains that these energy sources simply cannot compete with the low cost options provided by fossil fuels, hence the subsidies in the first place. Renewable energy investing has been bad enough over the past few years, but a Romney presidency could put a nail in that coffin. Of course, that is not to say that a Romney administration would potentially do wonders for fracking companies and other new oil technologies, but it is almost certain that green energy would suffer [see also The Best Way To Invest In Solar Energy].

#### Spoiler alert

**Allison and Blackwill, 10/30**/11 – \* director of the Belfer Center for Science and International Affairs at Harvard’s Kennedy School AND \*\* Henry A. Kissinger senior fellow for U.S. foreign policy at the Council on Foreign Relations (Graham and Robert, “10 reasons why Russia still matters,” Politico, http://www.politico.com/news/stories/1011/67178.html

That central point is that Russia matters a great deal to a U.S. government seeking to defend and advance its national interests. Prime Minister Vladimir Putin’s decision to return next year as president makes it all the more critical for Washington to manage its relationship with Russia through coherent, realistic policies.

No one denies that Russia is a dangerous, difficult, often disappointing state to do business with. We should not overlook its many human rights and legal failures. Nonetheless, Russia is a player whose choices affect our vital interests in nuclear security and energy. It is key to supplying 100,000 U.S. troops fighting in Afghanistan and preventing Iran from acquiring nuclear weapons.

Ten realities require U.S. policymakers to advance our nation’s interests by engaging and working with Moscow.

First, Russia remains the only nation that can erase the United States from the map in 30 minutes. As every president since John F. Kennedy has recognized, Russia’s cooperation is critical to averting nuclear war.

Second, Russia is our most consequential partner in preventing nuclear terrorism. Through a combination of more than $11 billion in U.S. aid, provided through the Nunn-Lugar Cooperative Threat Reduction program, and impressive Russian professionalism, two decades after the collapse of the “evil empire,” not one nuclear weapon has been found loose.

Third, Russia plays an essential role in preventing the proliferation of nuclear weapons and missile-delivery systems. As Washington seeks to stop Iran’s drive toward nuclear weapons, Russian choices to sell or withhold sensitive technologies are the difference between failure and the possibility of success.

Fourth, Russian support in sharing intelligence and cooperating in operations remains essential to the U.S. war to destroy Al Qaeda and combat other transnational terrorist groups.

Fifth, Russia provides a vital supply line to 100,000 U.S. troops fighting in Afghanistan. As U.S. relations with Pakistan have deteriorated, the Russian lifeline has grown ever more important and now accounts for half all daily deliveries.

Sixth, Russia is the world’s largest oil producer and second largest gas producer. Over the past decade, Russia has added more oil and gas exports to world energy markets than any other nation. Most major energy transport routes from Eurasia start in Russia or cross its nine time zones. As citizens of a country that imports two of every three of the 20 million barrels of oil that fuel U.S. cars daily, Americans feel Russia’s impact at our gas pumps.

Seventh, Moscow is an important player in today’s international system. It is no accident that Russia is one of the five veto-wielding, permanent members of the U.N. Security Council, as well as a member of the G-8 and G-20. A Moscow more closely aligned with U.S. goals would be significant in the balance of power to shape an environment in which China can emerge as a global power without overturning the existing order.

Eighth, Russia is the largest country on Earth by land area, abutting China on the East, Poland in the West and the United States across the Arctic. This territory provides transit corridors for supplies to global markets whose stability is **vital to the U.S. economy**.

Ninth, Russia’s brainpower is reflected in the fact that it has won more Nobel Prizes for science than all of Asia, places first in most math competitions and dominates the world chess masters list. The only way U.S. astronauts can now travel to and from the International Space Station is to hitch a ride on Russian rockets. The co-founder of the most advanced digital company in the world, Google, is Russian-born Sergei Brin.

Tenth, Russia’s potential as a spoiler is difficult to exaggerate. Consider what a Russian president intent on frustrating U.S. international objectives could do — from stopping the supply flow to Afghanistan to selling S-300 air defense missiles to Tehran to joining China in preventing U.N. Security Council resolutions.

So next time you hear a policymaker dismissing Russia with rhetoric about “who cares?” ask them to identify nations that matter more to U.S. success, or failure, in advancing our national interests.

#### Outweighs the aff

**Bostrom 2002** (Nick Bostrom, 2002. Professor of Philosophy and Global Studies at Yale. "Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards," 38, www.transhumanist.com/volume9/risks.html)

A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that might have been persistent enough to qualify as global and terminal. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy human civilization. Russia and the US retain large nuclear arsenals that could be used in a future confrontation, either accidentally or deliberately. There is also a risk that other states may one day build up large nuclear arsenals. Note however that a smaller nuclear exchange, between India and Pakistan for instance, is not an existential risk, since it would not destroy or thwart humankind’s potential permanently.

### 2nc – Obama win

#### Romney’s momentum has stopped and Obama’s superior ground game means he’ll narrowly win

**Cohen, 10/27/12** (Michael, The Guardian, “Despite the scare, victory is still at hand for Obama”

<http://www.guardian.co.uk/commentisfree/2012/oct/28/michael-cohen-obama-superior-campaign>

It seemed suddenly that a race, which once looked to be a foregone conclusion, was suddenly slipping out of the president's grasp. But not so fast. Just as soon as Romney's momentum began to rise, it stopped and the race simply reverted to the status that existed pre-debate; a narrow Obama lead in the national poll and a more significant lead in the all-important electoral college tally. It was helped along by Obama's stronger performances in the later debates, but the larger element of his continued advantage is a combination of both Obama the president and Obama the politician and the decisions that he has made wearing both hats.

First, there are the presidential decisions. When historians look back on Obama's presidency – no matter what happens on 6 November – two legislative accomplishments will loom largest: the passage of comprehensive healthcare reform and the stimulus bill passed in February 2009 that saved the economy from further economic calamity.

But while the stimulus might end up having an extraordinarily transformative and wide-reaching impact, it is rarely mentioned directly on the campaign trail by Obama. Instead, the president is more inclined to talk about a much smaller policy decision, but one whose political impact has been much larger – the bailout of the US car industry.

In key swing states of the Midwest, where manufacturing is still the lifeblood of the economy, the bailout almost certainly saved the US car industry. Nowhere has the bailout paid larger political dividends than in Ohio, a state that is by far the most important in the entire election and where one in eight jobs is tied to the car industry. Ohio looms largest because even though it has the seventh highest number of votes in the US electoral college, if Obama wins there, along with Wisconsin and Nevada – two states where he is currently leading in public polls – there is virtually no chance he will lose the election.

Obama has consistently led in Ohio. It is his campaign firewall. His advantage there comes not only from the auto bailout but also from the fact that he has devoted enormous time and energy to the state, both in numerous visits and the opening of 131 campaign offices, a total three times higher than that of Romney.

This is the second key to Obama's likely success on election day – his campaign infrastructure. In 2008, the Obama campaign made the decision to utilise its vast resources in building the best ground game and best get-out-the- vote operation that American politics had ever seen. They succeeded and according to one political scientist may have, through their campaign efforts, moved three states into their column on election day.

The Obama infrastructure appears better this year. Not only have the presidential campaigners developed sophisticated, data-driven techniques for identifying supporters, reaching out to them and ensuring they get to the polls, but they have opened hundreds of campaign offices around the country – almost exclusively in swing states – and hired hundreds of paid staff to man them.

The Republican ground game has dramatically improved from the hapless McCain effort in 2008, but few political observers believe it can hold a candle to Obama's. Beyond the advantage in offices that Obama enjoys in Ohio, he has a nearly two to one edge in practically every other swing state. While the number of offices is not the whole story, it does provide a hint of how significant an investment Obama has made in his campaign infrastructure and in a close race that infrastructure has the potential to make all the difference.

It's still hard to predict with certainty what will happen on election day. But it is, day by day, becoming ever more difficult to imagine a scenario in which Barack Obama is not re-elected president. And if he does win, it'll be in large measure because, to coin a phrase popularised by Republicans: "He built that."

#### State polling averages show a consistent lead for Obama

**Blumenthal, 10/27/12 –** editor of Pollster.com (Mark, “2012 Polls: When Is A Lead Really A Lead?” Huffington Post, <http://www.huffingtonpost.com/2012/10/27/2012-polls-lead_n_2031046.html>)

At the state level, however, the recent polling does show statistically meaningful margins that have also been consistent since Romney gained support just after the first debate, and more than 20 new state surveys released since Friday morning have done little to change that.

Three new polls of likely voters in Ohio released on Friday, for example, all give Obama edges ranging from 2 to 4 percentage points, bringing the total of new polls over the past week to give Obama a slight numerical edge in the state to six of seven. Again, considered in isolation, any one of these surveys would not indicate a statistically significant lead. But when combined by the Pollster tracking model, they give Obama a lead of roughly 2.5 percentage points in Ohio that the model considers statistically meaningful.

The overall standings produced by the aggregation of all of the public polls in the battleground states have been essentially unchanged for nearly three weeks. Although the margins have closed since the first debate and remain very close, Obama holds advantages of 2 percentage points or better in four states -- Ohio, Iowa, Nevada and Wisconsin -- that would combine with those favoring him by larger margins to give him 277 electoral votes, 7 more than needed for victory.

#### Prefer our evidence – state poll averages empirically get elections right

**Silver, 10/27/12** (Nate, “Oct. 26: State Poll Averages Usually Call Election Right”

<http://fivethirtyeight.blogs.nytimes.com/2012/10/27/oct-26-state-poll-averages-usually-call-election-right/>

The FiveThirtyEight forecast model has found the past several days of battleground state polling to be reasonably strong for Barack Obama, with his chances of winning the Electoral College increasing as a result. The intuition behind this ought to be very simple: Mr. Obama is maintaining leads in the polls in Ohio and other states that are sufficient for him to win 270 electoral votes.

Friday featured a large volume of swing state polling, including three polls of Ohio, each of which showed Mr. Obama ahead by margins ranging from two to four percentage points.

Between Ohio and the other battleground states, Mr. Obama held leads in 11 polls on Friday, against four leads for Mitt Romney’s and two ties. Mr. Romney’s leads came in North Carolina and Florida, two states where the FiveThirtyEight forecast already had him favored.

To the extent that there was a trend in the state polls, it was slightly favorable for Mr. Obama. Among the eight polls that had previously published numbers after the first presidential debate in Denver, Mr. Obama gained about one percentage point, on average.

Mr. Romney made gains in four of the five polls that had last surveyed the race before Denver. Nevertheless, his average gain in the polls – 2.4 percentage points – was less than the 4-point bounce he was seeing in the immediate aftermath of the Denver debate. This suggests that Mr. Romney’s bounce has receded some since his post-Denver peak.

The national polls out on Friday were not terribly newsworthy. Mr. Obama had a miniscule lead of 0.2 points between the eight national tracking polls that were published, reversing an equally small 0.2-point advantage for Mr. Romney in the same surveys on Thursday.

You can see here my thoughts on reconciling the differences between state and national polls. They may be reflective of a potential split outcome between the popular vote and the Electoral College, but there are other plausible hypotheses as well. Specifically, it could be that the national polls slightly underrate Mr. Obama’s position, that the state polls slightly overrate it, or both.

The FiveThirtyEight forecast has Mr. Obama leading the popular vote along with the Electoral College, because it uses both state and national polls to calibrate its estimate of where the vote stands. Also, however, Mr. Obama’s state polls were adjusted slightly downward because his national polls remain middling.

Still, our state-by-state forecasts are extremely similar to those issued by our competitors. For example, we had Mr. Obama projected to win Ohio by 2.4 percentage points as of Friday. That compares to a 2.3 percentage-point lead for Mr. Obama in the Real Clear Politics average of Ohio polls, a 2.9-point advantage for him in the Huffington Post Pollster model, and a 2.7-point edge for him according to Talk Points Memo’s Poll Tracker.

How often does a lead of two or three points in the polling average, with 10 days to go until the election, translate into a victory in the state?

This is the sort of question that the FiveThirtyEight forecast is designed to address. But a simpler method is to just look at what happened when candidates held similar advantages in the past.

In the table that follows, I have attempted to recreate a simple polling average for competitive states in past elections, using about the same rules that Real Clear Politics applies.

In particular, I’ve looked at all states in our database in which there were at least three distinct polling firms that conducted surveys in the window between 10 days and three weeks before the election. Like Real Clear Politics, I used only the most recent poll (the one closest to the 10-day cutoff) if the polling firm surveyed the state multiple times during this period. I used the version of the poll among likely voters if it was available, defaulting to registered voter numbers otherwise.

In the table, I’ve listed all cases in which the race was within the single digits in the polling average. If you focus on those cases where a candidate held a lead of two to three percentage points, he won the state in all six out of six cases, although the sample size was small.

Historically, this two- to three-point range has been something of an inflection point. Poll leads of 1.5 percentage points or less have been very tenuous and have not conveyed much advantage.

On the other hand, there was not a single instance in the database where a candidate lost a state when he held a lead of more than 3.5 points in the polling average at this point in time. (Bill Clinton, in 1992, lost Texas despite leading George H.W. Bush there by that margin.)

It is possible to generalize these findings by means of a probit regression model, where the independent variable is the candidate’s lead in the polling average and the dependent one is whether he won or lost the state.

That analysis implies that a lead of 2.4 percent in the polling average (Mr. Obama’s current edge in Ohio in the FiveThirtyEight model) would translate to a win in the state 82 percent of the time. This percentage is similar to, but slightly higher than, the FiveThirtyEight forecast, which gave Mr. Obama a 76 percent chance of winning Ohio as of Friday.

It is important to emphasize that this analysis covers cases in which there were at least three distinct polling firms active in a state; you will find more frequent misses in cases where there were just one or two polls.

In Ohio, however, there are not just three polls: roughly a dozen polling firms, rather, have surveyed the state over the past 10 days.

There are no precedents in the database for a candidate losing with a two- or three-point lead in a state when the polling volume was that rich.

### link

#### The public will buy negative spin that being pro-renewable makes you anti-fossil fuel - empirically

**Wood, 9/28/12** – writes regularly for AOL Energy (Elisa, “Energy & The US Electorate”,

http://energy.aol.com/2012/09/28/energy-and-the-us-electorate-white-paper/)

As energy becomes politicized this lack of understanding makes the electorate increasingly malleable to the sound bite and easily swayed on issues that have signiﬁcant economic and environmental ramiﬁcations, according to Public Agenda, which recently published a citizens energy guide.

This tendency to waffle comes at a particularly bad time. The energy industry is undergoing vast changes that will affect the country for decades; it wants consistent policy and direction before making large investments – and for good reason.

"With energy decisions, it takes a long, long, long time to see a result. A power plant lasts 40 to 50 years. They are huge and expensive. You don't build them every day. Even in terms of oil exploration – you don't just ﬁnd it in Alaska, and we have it in our car tomorrow," Johnson said.

The problem is further exasperated by the tendency of political parties and special interest groups to reduce energy to simple black and white arguments that draw passion. Those who propose complex solutions ﬁnd it difficult to be heard above the din.

Forget Nuance

Former Colorado Governor Bill Ritter discovered this ﬁrsthand when his administration embraced both renewable energy and natural gas. During Ritter's campaign for Governor, he appeared in a commercial with a wind farm, so therefore was perceived as anti-fossil fuel – even though he wasn't.

"What we were trying to do was promote a variety of resources. Wind was probably the biggest beneﬁciary, but our agenda was about clean energy broadly, including natural gas," said Ritter, who served as governor from 2007 to 2011 and is now director of the Center for the New Energy Economy at Colorado State University. His image as anti-fossil fuel grew as he pushed for stiffer extraction rules for the natural gas industry. But later, when Ritter signed a bill that expanded the market for natural gas by shutting down coal-ﬁred plants, people did not know how to peg him.

"We had said all along that we were in favor of this industry [natural gas] surviving and even thriving. But because we were stubborn about the extraction process being environmentally sound, we got slotted into another place," Ritter said. "It became very difficult to communicate a message that people understood. The mindset is that you are either an environmentalist or an industry person."

#### Obama is promoting an “all of the above” energy strategy – this allows him to distance himself from prior renewables scandals. The plan makes Obama a target and will cost him the election

**Farnam, 12** (T.W., Washington Post, 6/27, “Energy ads flood TV in swing states,”

http://www.washingtonpost.com/politics/energy-ads/2012/06/27/gJQAD5MR7V\_story.html

Energy issues don’t spark much excitement among voters, ranking below health care, education and the federal budget deficit — not to mention jobs and the economy.

And yet those same voters are being flooded this year with campaign ads on energy policy. Particularly in presidential swing states, the airwaves are laden with messages boosting oil drilling and natural gas and hammering President Obama for his support of green energy. The Cleveland area alone has heard $2.7 million in energy-related ads.

The disconnect between what voters say they care about and what they’re seeing on TV lies in the money behind the ads, much of it coming from oil and gas interests. Those funders get the double benefit of attacking Obama at the same time they are promoting their industry.

Democrats also have spent millions on the subject, defending the president’s record and tying Republican candidate Mitt Romney to “Big Oil.”

Overall, more than $41 million, about one in four of the dollars spent on broadcast advertising in the presidential campaign, has gone to ads mentioning energy, more than a host of other subjects and just as much as health care, according to ad-tracking firm Kantar Media/Cmag.

In an election focused heavily on jobs and the economy, all of this attention to energy seems a bit off topic. But the stakes are high for energy producers and environmentalists, who are squared off over how much the government should regulate the industry. And attention has been heightened by a recent boom in production using new technologies such as fracking and horizontal drilling, as well as a spike in gas prices this spring just as the general election got underway.

When asked whether energy is important, more than half of voters say yes, according to recent polls. But asked to rank their top issues, fewer than 1 percent mention energy.

Still, so much spending focused on a topic low on the public agenda should not be a surprise, given the interest of the ad sponsors, said Bob Biersack, a senior fellow at the nonpartisan Center for Responsive Politics.

“It’s always been true that people’s financial involvement in politics tends to reinforce their self-interest,” he said.

The policy debate coincides with a flurry of criticism of the Obama administration’s loan guarantee for Solyndra, a bankrupt solar-power company that defaulted on more than $500 million. Among the company’s investors was the family foundation of a major donor to Obama.

“Half a billion in taxpayer money gone, and Obama said this was a model of growth,” says an ad from the conservative group Americans for Prosperity. “Tell President Obama that workers aren’t pawns in your political games.”

Obama spokesman Ben LaBolt said the campaign welcomed the fight over the administration’s energy policies, saying the president can win on the merits.

“This debate has offered us the chance to highlight the success of the president’s all-of-the-above energy strategy – domestic oil production at a 12-year high and our dependence on foreign oil at a 16-year low, domestic natural gas production at an all-time high and doubling our renewable energy production,” LaBolt said.

Republicans are also attacking Obama for rejecting permits for the proposed Keystone XL pipeline, which would carry oil from tar sands in Canada to refineries on the Gulf Coast. Romney opened the general election with an ad prominently featuring the Keystone issue, with the candidate saying he would reverse Obama and approve the pipeline on his first day in office.

Americans for Prosperity, one of the major funders of the ads, has sponsored five television spots against Obama, two of them focused on Solyndra and another critical of government spending on clean energy.

The organization, which has promoted tea party candidates, has devoted more than 90 percent of its ad spending to energy-related commercials, according to Kantar.

The Obama campaign and other Democrats have been critical of the group, saying, among other things, that its billionaire backers, brothers Charles and David Koch, are using it to promote the interests of the chemical conglomerate they own. David Koch is a founder and chairman of the organization. A Koch spokesman declined to comment.

Obama answered Americans for Prosperity’s message in his first ad of the campaign.

“Secretive oil billionaires attacking president Obama with ads fact checkers say are not tethered to the facts,” a narrator says in the spot.

Tim Phillips, president of Americans for Prosperity, said the group focused on Solyndra because the firm’s federal loan guarantee exemplifies cronyism and big government, with bureaucrats choosing economic winners and losers in the way they dole out public money.

“To us, Solyndra encapsulates everything that’s wrong with the economic policies of President Obama,” Phillips said. “It’s not just the energy, although the energy is important.”

The group also ran millions of dollars of advertising in 2009 and 2010 opposing the president’s health-care plan, Phillips said.

All of these messages could very well do what their funders have in mind and shape public opinion, tarring renewable energy as a government boondoggle, said Kathleen Hall Jamieson, director of the Annenberg Public Policy Center at the University of Pennsylvania.

“Ads can create an agenda-setting effect and frame an issue,” she said. “If renewable energy comes to be seen as Solyndra, that’s a problem for that sector, not simply for future government investment in that sector.”

#### Angry voters turn out more

**Harpuder 2003** (Lieutenant Junior Grade Brian, Electoral Behavior in U.S. Senate Elections, A Simultaneous Choice Model, Dissertation, The Degree of Philosophy, Ohio State University, p. ii)

With respect to evaluations of the economy and personal finances the research clearly shows support for the angry voter hypothesis. Citizens who are dissatisfied with the state of the national economy, angry voters, are more likely to turnout than those who are satisfied. Their dissatisfaction is expressed toward incumbents because they become more likely to vote for the challenging party. Personal financial evaluations are also shown to have a limited impact on electoral behavior.

#### Hostile spin wins out

**Wood, 9/28/12** – writes regularly for AOL Energy (Elisa, “Energy & The US Electorate”,

http://energy.aol.com/2012/09/28/energy-and-the-us-electorate-white-paper/)

But it’s one thing to provide accurate and unbiased information to voters; it’s another to get them to believe you. Today people are besieged by energy messages, they are suspicious, and it’s not easy getting through all the noise, points out Patricia Stanton, senior vice president of policy & advocacy at Massachusetts-based Conservation Services Group, which has been educating homeowners, businesses and policymakers about energy efficiency for almost three decades.

### 2NC Russian Relations

#### We don’t have to win Romney’s a neocon – he just pisses off a self-interested Russian government

Mark Adomanis, 10-23-2012; analyst for Forbes, has written for True/Slant, INOSMI, Salon, the National Interest, Quartz, and RT, also writes stupid-good oil DA cards; “How Will Mitt Romney Demonstrate ‘Backbone’ With Vladimir Putin?” http://blogs.forbes.com/markadomanis/

How Will Mitt Romney Demonstrate ‘Backbone’ With Vladimir Putin? The presidential debate last night was, at least from my perspective, noteworthy precisely because it wasn’t much of a debate: the candidates didn’t actually disagree on very much. Sure they made it seem like they were at loggerheads. There was a lot of macho posturing and crude attempts to prove that “my opponent’s an idiot!” But if you ignored all of the bluster and one-liners and instead focused on the policies the candidates were proposing, they were basically reading from the same script. There was at least one area of genuine disagreement, though, and luckily for me it was about Russia. This topic came up not because of any effort by the moderator, who seemed to be asleep for the 40 or so minutes that I was watching the debate on TV, but because an animated and combative Obama tried to zing Romney for describing Russia as the US’ “number one geopolitical foe.” According to the transcript, Romney responded with the following (emphasis added): Excuse me. It’s a geopolitical foe. And I said in the same — in the same paragraph, I said, and Iran is the greatest national security threat we face. Russia does continue to battle us in the U.N. time and time again. I have clear eyes on this. I’m not going to wear rose-colored glasses when it comes to Russia or Mr. Putin, and I’m certainly not going to say to him, I’ll give you more flexibility after the election. After the election he’ll get more backbone. Now because the debate was poorly run there wasn’t any follow-up on Romney’s proposed backbone-centric Russia policy. But it naturally raises a number of questions, the most obvious of which is “how would the Russians respond?” It’s worth trying to think through what a more combative Russia policy would achieve and what sorts of unintended consequences it might have because, at least as far as I can tell, it’s one of the only areas of genuine disagreement between the two candidates and one of the few foreign policy changes we could realistically expect from a Romney administration. Obama has been accused of being “soft” on Russia largely because of things he hasn’t done: he hasn’t signed, and has worked to delay passage of, the Sergei Magnitsky Rule of Law Accountability Act, he hasn’t aggressively responded to the recent expulsion of USAID, and he’s generally, though not entirely, refrained from criticizing Russian domestic policy. I think it’s fair to say that Romney would support passage of the Magnitsky bill, would aggressively respond to the closure of USAID (perhaps following David Satter’s advice of expelling a bunch of Russian diplomats), and would generally take a hawkish and unaccommodating line. Though Mitt Romney’s website is still pretty scant on the details of his proposed Russia policy, I don’t think it’s being uncharitable or unrealistic to say that Romney is contemptuous of and dismissive towards Russia’s current regime and that he would be much more aggressive in confronting Putin. But the Russians aren’t automatons who have been programmed to behave in a specific way, they’re human actors who respond to external stimuli and changes in US policy. The fact that the Russians are more cooperative since the start of the “reset” isn’t some bizarre puzzle that needs to be explained, it’s exactly what we ought to expect. Russia’s limited cooperation with the United States over the past four years hasn’t been by default or because the Russians “had no other options,” it has occurred because the Russian political leadership calculated that Russian interests were best promoted via cooperation with the Obama administration. But this calculation could easily change, and it doesn’t take an active imagination to think of a scenario in which Russia responds to an aggressive Romney policy by doing something asinine like re-instating the S-300 sale to Iran. I understand that Romney’s response during the debate wasn’t a detailed policy prescription and that it’s unrealistic to expect extreme levels of detail from off-the-cuff and unprepared statements delivered live on national television. But the “backbone” comment is perfectly in keeping with Romney’s past statements on the issue. Romney, and foreign policy hawks in general, take a strangely one-sided view of US-Russia relations, and tend to view it as an arena in which the US is the only party with any real agency. In this view the Russians cooperate on issues like Afghanistan and Iran “because they have to” and the US can afford to aggressively oppose other Russian policies without paying any cost. But that’s clearly not the case. The Russian government has many interests but its first priority, like any government, is survival. If the Russian government concludes that its survival might be threatened by Romney’s policies (and since Romney openly declares his intention of replacing the current government they wouldn’t be unreasonable in reaching such a conclusion) they will oppose those policies with every means at their disposal. Such an observation is hardly novel, but I’ve never seen anyone offer a coherent explanation of why the Russian government will continue to support Iran sanctions or the Northern Distribution Network in the face of aggressive attempts to weaken and marginalize it.

## 2nc states

### AT: 50 state fiat bad

#### b.Literature supports 50 state uniformity

**Northrop and Sassoon, 08** - Program Director for Sustainable Development at the Rockefeller Brothers Fund and administrator of SolveClimate.com (Michael David, Yale Environment 360, 6-3, <http://e360.yale.edu/content/feature.msp?id=2015>)

But the states have far more to offer. They also have approved a host of energy-efficiency measures affecting all sectors of the economy. For example, one set of policies provides both emissions reductions and substantial economic savings from the building sector through improved building codes, insulation and weatherization programs, and lighting retrofits. From the waste management sector, waste reduction and recycling programs yield similar two-pronged benefits.

These policies go hand-in-hand with others mandating that an increasing percentage of a state’s energy come from renewable sources, such as solar and wind power. Many states — chief among them California — have shown similar national leadership by significantly toughening auto emissions standards, leading Congress to increase national vehicle standards last December and the Environmental Protection Agency (EPA) to challenge the states in court.

The fact that so many states are acting with a similar impetus begs an important question: What would happen if you aggregated these policies and applied them on a national scale?

One study conducted by the Center for Climate Strategies (CCS) — a non-partisan group that has worked on climate policymaking and analysis with many of these states — indicates that the adoption of a comprehensive, nationwide climate and energy policy would have substantial economic benefits. Using data from 12 states that are leaders in the field of climate change and energy, CSS calculated that were all 50 states to adopt similar rules and legislation, the aggregate economic savings would be $25 billion. The nation could achieve a 33% reduction in projected greenhouse gas emissions by 2020 — a common interim target — and save money doing so.

**Relevant Policy Choice – State Lawmakers must compare and choose in the absence of Federal Action – means our cp provides a real-world policy option**

**Biering 8 –** former Executive Fellow in the California Resources Agency (Brian, 23 J. Envtl. L. & Litig. 35)

Federalism issues aside, the fundamental question policymakers need to resolve is whether it is more appropriate for the states to act now in the area of climate change, or whether the field should be simply left to the federal government to address in its own time.

#### 50 state fiat isn’t unprecedented

**Mountjoy 4,** (John J., Director of National Center for Interstate Compacts and Associate Director for National Policy Coordination, The Council of State Governments, “Solutions for States: Interstate Compacts as a Tool,” http://www.csg.org/programs/ncic/documents/SolutionsForStates.pdf)

Interstate compacts are contracts between states and carry with them the force and effect of statutory law. While most interstate compacts are rudimentary in function (regulating boundaries and water rights) and have signatories numbering below fifteen, several interstate compacts maintain membership of all 50 states (or close to it) and have administrative/regulatory agencies that oversee the functionality of the compact between states. The Drivers’ License Compact and its American Association of Motor Vehicle Administrators regulate and allow states to recognize drivers’ licenses issued in other states. The Interstate Compact for Education and its Education Commission of the States maintain close cooperation and understanding among executive, legislative, professional, educational leadership on a nationwide basis at the State and local levels.

#### It’s not utopian –– it’s the squo

**Carlarne, 8** - Assistant Professor, University of South Carolina School of Law (Cinnamon, July, “Notes from a Climate Change Pressure-Cooker: Sub-Federal Attempts at Transformation Meet National Resistance in the USA,” 40 Conn. L. Rev. 1351, lexis)

On its own, California can exert political pressure and make emission reduction gains. As was demonstrated in the previous discussion of regional collaborations, however, California is not trying to go it on its own. Instead, Governor Schwarzenegger is coupling California's state-wide efforts with multiple regional partnerships that seek to expand the geographic, economic, and political scope of sub-national climate change [\*1374] policies. And, it is these growing, politically concerted efforts that begin to distinguish state-led climate change policy-making from the previous model of states as laboratories for federal policy-making. In the context of climate change, states are not merely taking individual action to develop unique tools; they are banding together to improve the physical and political efficacy of their efforts. In the words of one prominent commentator, there is a "stealth-like" effort by state level politicians to create enough political momentum to overcome federal inertia.

### --XT – plan doesn’t solve uncertainty

#### Every argument regarding legal uncertainty and the possibility of litigation also applies to the plan

**Dorsi, 12** - Fellow, Phillips & Cohen LLP; J.D. Harvard Law School, 2011 (Michael, “Clean Energy Pricing and Federalism: Legal Obstacles and Options for Feed-in Tariffs” 35 Environs Envtl. L. & Pol'y J. 173, lexis)

Due to the Supreme Court's doctrinal shift with regard to commandeering, new legal challenges may put PURPA at risk. Although the Supreme Court has not consistently continued the federalism revolution since the resignation of [\*194] Justice O'Connor and the death of Chief Justice Rehnquist in 2005, n119 there also is no indication that the change in the composition of the court would lead to different outcomes. Additionally, should the Court find itself facing a circuit split, or even simply a circuit court striking down PURPA, n120 it may become likely that the Court will hear the case.

A challenge to the constitutionality of PURPA and the holding of FERC v. Mississippi could take one of four categories of cases. First, if Congress enacted a new statute expanding Section 210 to require state establishment of feed-in tariffs, the provision would be at risk of being struck down in response to a facial challenge. Such legislation, however, is unlikely to pass Congress, therefore a facial challenge will almost certainly not materialize. As discussed in section III.D, PURPA in its current form may provide authorization to establish feed-in tariffs under current federal law. The validity of such an authorization would depend on the constitutional status of PURPA, which may be questioned by a challenge to the existing statute.

A second type of challenge to PURPA could arise from a state or another stakeholder, challenging Title I or III of PURPA, either by properly raised affirmative litigation or by refusal to comply with FERC rules and raising a constitutional defense against federal enforcement. Such a challenge would force a court to resolve the conflict between FERC v. Mississippi and subsequent cases. While Title I and III are suspect under current doctrine, that does not mean such a challenge would necessarily imperil Section 210. If a court found Title I or III unconstitutional, that court would then have to address whether Section 210 is severable from Title I or III of PURPA, or if Section 210 [\*195] must be struck down alongside Titles I and III. In cases regarding statutes without explicit severability (or non-severability) clauses, severability is a difficult inquiry that leads to unpredictable outcomes. All of this may happen in one or more cases, but it cannot happen from a case dealing with feed-in tariffs promulgated subject to the avoided cost requirements of Section 210. Such a challenge would not bear on Title I or III, and therefore could not challenge the constitutionality of PURPA on that basis. n121 The import of the possibility of such a challenge is that state reliance on PURPA is not an entirely safe proposition, States' feed-in tariff policies cannot spur this type of litigation because feed-in tariffs are not based on Title I or III of PURPA, and states adopting feed-in tariffs cannot do much to avoid this sort of challenge. Lastly, since no such challenge has been raised in the fourteen years since Printz, it is unlikely a challenge of this type will occur soon.

A third type of challenge would involve a litigant state either raising a proper challenge to Section 210 or refusing to continue implementing Section 210 and properly raising a commandeering defense to federal enforcement. Such a case would avoid the greater vulnerability of Titles I and III of PURPA, but would also circumvent questions of severability. Such a challenge would require the courts to squarely address whether Section 210, as applied, commandeers state regulatory agencies. Given the practical necessity for state regulations, not just adjudicative hearings, to implement avoided cost provisions, this could be a difficult case.

#### It actually applies more to the plan

**Michaels, 8 -** Professor of Economics, California State University, Fullerton (Robert, “NATIONAL RENEWABLE PORTFOLIO STANDARD: SMART POLICY OR MISGUIDED GESTURE?”, 29 Energy L. J. 79, lexis)

The third rationale for centralization is that jurisdictional fragmentation can increase uncertainty. Investors will demand high returns if they do not have reasonable assurance that some degree of institutional stability will prevail. Operating under several state regulators increases uncertainty, but concerns about federal law have proven important in practice. n127 The source of uncertainty most often cited by RPS advocates is the federal Production Tax Credit on wind energy, whose presence has dramatically influenced investment. n128 It has been enacted, expired, and re-enacted four times. No state RPS law contains any comparable risks, and any legal change applies only to that state. Repeal or amendment of a federal law affects the entire nation.

### AT: Federal preemption

#### Federal preemption is no longer an issue as long as the state also has an RPS – a new FERC ruling means they can set rates in accordance with the higher cost of renewable mandates – this establishes price certainty

**Dorsi, 12** - Fellow, Phillips & Cohen LLP; J.D. Harvard Law School, 2011 (Michael, “Clean Energy Pricing and Federalism: Legal Obstacles and Options for Feed-in Tariffs” 35 Environs Envtl. L. & Pol'y J. 173, lexis)

In 2008, California enacted AB 1613, requiring the California Public Utilities Commission ("CPUC"), in collaboration with other state agencies, to establish what amounts to a new variety of feed-in tariff for energy from combined heat and power facilities ("CHP"). n65 While California is not the only state to enact a feed-in tariff; n66 California was recently involved in the litigation that may determine the fate of most other feed-in tariffs in the United States. n67 AB 1613 requires the CPUC to set rates at which regulated utilities must offer to purchase from CHP generators under twenty megawatts. n68 The CPUC adopted a two-tier structure to implement the feed-in tariff, with a standard contract for units up to twenty megawatts and a simplified feed-in tariff for units under five megawatts. n69

In May 2010, the CPUC sought a declaratory order from FERC stating that [\*188] California's feed-in tariff was not preempted. n70 Days later, the state's three main private utility companies, Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric (collectively "Joint Utilities"), sought the opposite order from FERC. n71 FERC consolidated the proceedings. n72 The Joint Utilities argued that AB 1613 is preempted by the FPA and impermissible under PURPA. n73 The CPUC argued that the policy goals of reducing greenhouse gas emissions suggest that FERC should read PURPA and relevant regulations in a way compatible with AB 1613. n74 The California Attorney General, filing separately, argued that the Federal Power Act only preempts regulations requiring a purchase of energy, not an offer to purchase, because it does not set a wholesale rate. The California Attorney General also argued, in the alternative, that even if such an offer was preempted, there is legal opportunity under PURPA and related FERC regulations for California to proceed with AB 1613. n75

FERC, without explanation, rejected California's argument that an offer to purchase would not set a wholesale rate. n76 However, FERC suggested that California could go forward in accordance with PURPA. n77 After a request for clarification, FERC elaborated that tiered avoided cost rates for different types of QFs (such as a higher rate for CHPs than gas-fired generators) and adders for location-constrained areas may be permissible if they reflect actual costs that would be incurred by utilities given other state policies. n78 The resulting policy may enable a feed-in tariff at a level that would subsidize preferred energy sources because the utility is required by other legal obligations to procure a share of power from more expensive preferred resources. Although that subsidy [\*189] could only match the level required by other policies, the feed-in tariff could establish the benefit of price certainty. For example, if a state established efficiency standards for generation, then the long run avoided cost of meeting these efficiency standards would be above the standard avoided cost for a typical generator. The utility could satisfy this requirement by procuring power from a QF, and the state would be permitted to include an estimate of this cost of compliance with the energy efficiency policy in the feed-in tariff rate. Initially this may seem useless; if the state already mandated the efficiency standard, then there should be no need for a feed-in tariff. However, because other state policies often fail to meet targets, n79 and because price certainty reduces the risk premium demanded by investors, n80 permitting states to create predictable revenue streams for preferred energy sources may serve as a valuable policy tool.

#### The FERC ruling set the stage for rapid state expansion of FITs – states can get around preemption – and, any difference in uncertainty also applies to a federal FIT. The fiat of the CP is a prerequisite to the aff’s solvency as well

**Dorsi, 12** - Fellow, Phillips & Cohen LLP; J.D. Harvard Law School, 2011 (Michael, “Clean Energy Pricing and Federalism: Legal Obstacles and Options for Feed-in Tariffs” 35 Environs Envtl. L. & Pol'y J. 173, lexis)

A feed-in tariff, also known as a CLEAN contract, n3 is a type of contract offer that allows an energy producer, usually from a renewable or otherwise preferred energy source, to connect to the grid and be paid a pre-determined rate. The feed-in tariff works by requiring the local utility or other intermediary to purchase, or at least to offer to purchase, energy at a set price per unit from producers who meet certain criteria. This stability has proven valuable for investment in renewable energy by creating certainty with regard to return on investments. n4

In Europe, several countries established feed-in tariffs, with some notable success in expanding investment in renewable energy. European feed-in tariffs have been established by national governments. In the United States, however, a handful of feed-in tariffs operate for states and cities but cover only a small [\*176] share of electricity producers. The primary obstacle to implementing feed-in tariffs is the division between state and federal roles in energy regulation. Absent federal action, several states began the process of developing feed-in tariffs, and now face the obstacle of federal preemption lawsuits. This Article argues that these obstacles present risks to state policies, but if states adhere carefully to statutory requirements and effectively advocate for their role in the federal system, states can establish effective feed-in tariffs.

In the United States, the state-federal divide in energy regulation tracks the distinction between retail and wholesale electricity. States have authority over retail sales and procurement decisions by utilities, such as requiring that utilities purchase energy from a certain mix of resources. States also regulate rates, assuring that utilities can recover their costs. However, the federal government retains the authority to regulate interstate commerce, n5 and under this authority, the Federal Power Act establishes that prices paid by utilities to purchase power at wholesale are to be regulated by the Federal Energy Regulatory Commission ("FERC"). n6 This division of authority between state and federal regulators creates ambiguity regarding who holds the authority to establish a feed-in tariff.

A federally-operated feed-in tariff, though constitutionally permissible, would encounter problems with the varied electric markets and regulatory regimes in different states. Due to state control over retail electricity and state participation in centralized electricity management organizations, known as Independent System Operators ("ISOs") and Regional Transmission Operators ("RTOs"), some states have electricity markets conducive to feed-in tariffs mandated on utilities, while others do not. Additionally, policies favoring cleaner energy have proliferated at the state level while such policy processes have largely faltered at the federal level. n7

Presently, states are authorized to create a kind of standard contract for Qualifying Facilities ("QFs") that provide power. The 1978 Public Utility Regulatory Policies Act n8 ("PURPA") requires state utility commissions to carry out FERC regulations to permit non-utility generators meeting certain requirements to connect to the grid and it requires utilities to purchase that power at a rate defined as avoided cost. n9 However, avoided cost is often insufficient to fund renewable energy. n10 The claimed benefits of renewable [\*177] energy are not that it is cheaper to produce, but that it is a better deal once social costs are considered. When states attempted to include externality costs in their avoided cost rates, FERC ruled that only those costs which the utility faces may be considered in setting avoided cost. n11 As a result, PURPA, absent legislative or regulatory innovation, is insufficient to develop feed-in tariffs. A new, more precise interpretation of PURPA by FERC in a case regarding California's feed-in tariff may provide a window for the expansion of feed-in tariffs.

Alternatively, some have proposed that the federal government could require or permit states to establish feed-in tariffs. While permitting state action would be permissible, requiring state action may not be. Although the Supreme Court upheld PURPA's avoided cost requirements in FERC v. Mississippi, n12 the Court has since shifted its federalism doctrine and no longer permits federal commandeering of state regulatory agencies. n13 Moreover, in the current political situation, new energy legislation may be difficult if not impossible, suggesting that regulatory options should also be explored.

### 2nc solvo

#### States create federal follow on

**Dutzik, 11** - senior policy analyst with Frontier Group, specializing in energy, transportation and climate policy (Tony, “The Way Forward on Global Warming Reducing Carbon Pollution Today and Restoring Momentum for Tomorrow by Promoting Clean Energy”, <http://www.environmentamerica.org/sites/environment/files/reports/The-Way-Forward-on-Global-Warming.pdf>)

Over the past several years, vast resources have been devoted to winning comprehensive energy and climate legislation at the federal level, and for good reason— comprehensive federal legislation will be necessary to produce the emission reductions needed to put America and the world on track to prevent the worst impacts of global warming.

There are, however, countless additional opportunities to reduce emissions using existing federal statutes as well as the opportunities presented by action at state and local levels of government.

In this report, we estimate the potential impacts of 30 public policies, measures and initiatives to reduce global warming pollution, most of which can be adopted at the state level. With 50 states, that makes more than 1,000 potential opportunities to reduce global warming pollution.

State and local action on global warming is not a “second-best” solution to the climate crisis. Indeed, time and again, ambitious public policy action at the local or state level has created a precedent for strong action at the federal level. Moreover, as described below, state and local campaigns can involve and engage citizens in ways that federal legislative campaigns cannot. Under the right conditions, these policies can not only deliver concrete emission reductions, but they can also spur changes in infrastructure and transform economic conditions in ways that will make the goals of an eventual national program easier to meet.

## 1nr case

### Solvency

**Renewables have physical and environmental limitations that prevent it from overtaking coal**

**Chaisson, 07 –** Director Research and Technology Clean Air Task Force (Joseph, “CLEAN COAL,” CQ Congressional Testimony, 4/6, lexis

Despite these problems, coal fired power generation is likely to be relied on for decades to come and is projected to expand dramatically. World electric demand is expected to triple by 2050, coming largely from developing countries like China and India. Most analyses agree that this underlying demand growth will substantially outpace even the most aggressive energy efficiency policies. Renewable energy, while it should and will be widely deployed, faces significant physical, environmental and economic challenges that will practically limit its share of total electrical supply for several decades. Natural gas is relatively expensive and its reserves are far more limited than coal. Finally, nuclear power faces considerable hurdles of scale, economics and environmental opposition. For these reasons among others, China is building as much new coal capacity each year as the entire UK power grid, and coal power generation in India is projected to grow rapidly - matching current US coal consumption by 2020 and China's current coal consumption by about 2030. The United States faces both growing demand for electricity and an aging power plant fleet; coal will remain economically attractive to meet some portion of electricity demand growth and to replace some existing power plants.

**Renewables can’t replace coal, because they can’t provide baseload generation**

**Trisko, 4/23/**09 \*attorney for the United Mine Workers of America (Eugene, CQ Congressional Testimony, “CLIMATE CHANGE LEGISLATION”, lexis

Intermittent renewables such as wind cannot replace baseload coal generation, and usually are backed up with natural gas. To reduce coal in our energy supply mix means using another fuel to replace it for baseload generation, most likely a combination of nuclear and natural gas. Such a fundamental shift in U.S. energy policy would bring into question the cost and the availability of natural gas supplies. Substantial increases in demand for natural gas inevitably would lead to much higher electric generation costs, higher natural gas costs for consumers and industries, and greater dependence on foreign sources for supply. At the margin, our gas supplies will come from higher-cost unconventional reserves, and imports from Canada and unstable foreign markets in the form of LNG.

**Coal is inevitable, the plan can’t displace it fast enough to address warming**

**McKie, 09** (Robin, The Observer (England), “Energy debate: Coal at centre of fierce new climate battle,” 2/15, lexis

And not before time. According to energy experts, Britain now has no chance of meeting its climate change obligations and the planet has little prospect of tackling global warming without a means of stopping carbon emissions from fossil fuel plants. We can expand renewable power, build nuclear plants and improve energy conservation, but will remain at the mercy of power plants and factories that burn fossil fuels. The world is too dependent on carbon fuels to quit its addiction in a decade or two, it is argued. We need to deal with them directly and urgently, with prime emphasis on the most dangerous of all fossil fuels: coal.

According to Jim Hansen, the climate change champion and director of Nasa's Goddard Institute for Space Studies in New York, coal now rates as the greatest evil our planet faces. "Trains carrying coal to power plants are death trains," he says in an uncompromising opinion article in today's Observer . "Coal-fired plants are factories of death."

Many other scientists agree. Coal poses special environmental problems. It is dirty; burning it releases pollutants that cause acid rain; its combustion produces less heat than the burning of gas and oil, meaning that disproportionate amounts are needed to run power plants and factories. Yet in only a few weeks, the government is expected to approve construction of a massive new coal power plant at Kingsnorth in Kent.

Worst of all, however, is the simple fact that coal remains plentiful and cheap. "The world's oil and gas will probably run out in 50 years, but coal will last for hundreds of years," said Professor Dermot Roddy, of Newcastle University. "In Britain, with its two centuries of mining, we still have more than 100 years of coal supply. It will not run out overnight."

The fossilised remnants of 100 million-year-old plants, coal is still the world's major source of electricity, generating 41% of its power supply. Even in the United States, the most technologically advanced nation, almost half its electric ity is generated this way. In rapidly developing nations such as India and China, new coal power plants are opened every month. For Hansen, the only solution is the introduction of a carbon tax across the globe. Companies would be taxed by national governments according to their levels of emissions. Any that failed to set up such systems would have their exports taxed by the rest of the world. Fossil fuel plants, especially coal plants, would be priced out of existence.

But last week British energy experts warned that a system of carbon taxes had little chance of success, particularly in dealing with coal. "Coal is going to be available as a source of energy for at least another century and countries like China, India and Russia have particularly rich resources," said Mike Stephenson, head of science at the British Geological Survey. "It does not matter what we say in the west about what they should do, they will always want to exploit their coal. If it is in the ground, people will always be tempted to use it. The only way round the problem is to make the use of coal safe and environmentally friendly."

In other words, only technology can save the day - in the form of CCS schemes. "The position is very simple," said energy expert Jon Gibbins, of Imperial College London. "The only way we can decarbonise our electricity production on the timescale needed to halt the worst effects of climate change is by setting up carbon capture and storage plants as matters of urgency." Nuclear and wind plants simply cannot be constructed in the time available.

### warming

#### Warming’s irreversible

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Carbon dioxide, methane, nitrous oxide, and other greenhouse gases increased over the course of the 20th century due to human activities. The human-caused increases in these gases are the primary forcing that accounts for much of the global warming of the past fifty years, with carbon dioxide being the most important single radiative forcing agent (1). Recent studies have shown that the human-caused warming linked to carbon dioxide is nearly irreversible for more than 1,000 y, even if emissions of the gas were to cease entirely (2–5). The importance of the ocean in taking up heat and slowing the response of the climate system to radiative forcing changes has been noted in many studies (e.g., refs. 6 and 7). The key role of the ocean’s thermal lag has also been highlighted by recent approaches to proposed metrics for comparing the warming of different greenhouse gases (8, 9). Among the observations attesting to the importance of these effects are those showing that climate changes caused by transient volcanic aerosol loading persist for more than 5 y (7, 10), and a portion can be expected to last more than a century in the ocean (11–13); clearly these signals persist far longer than the radiative forcing decay timescale of about 12–18 mo for the volcanic aerosol (14, 15). Thus the observed climate response to volcanic events suggests that some persistence of climate change should be expected even for quite short-lived radiative forcing perturbations. It follows that the climate changes induced by short-lived anthropogenic greenhouse gases such as methane or hydrofluorocarbons (HFCs) may not decrease in concert with decreases in concentration if the anthropogenic emissions of those gases were to be eliminated. In this paper, our primary goal is to show how different processes and timescales contribute to determining how long the climate changes due to various greenhouse gases could be expected to remain if anthropogenic emissions were to cease. Advances in modeling have led to improved AtmosphereOcean General Circulation Models (AOGCMs) as well as to Earth Models of Intermediate Complexity (EMICs). Although a detailed representation of the climate system changes on regional scales can only be provided by AOGCMs, the simpler EMICs have been shown to be useful, particularly to examine phenomena on a global average basis. In this work, we use the Bern 2.5CC EMIC (see Materials and Methods and SI Text), which has been extensively intercompared to other EMICs and to complex AOGCMs (3, 4). It should be noted that, although the Bern 2.5CC EMIC includes a representation of the surface and deep ocean, it does not include processes such as ice sheet losses or changes in the Earth’s albedo linked to evolution of vegetation. However, it is noteworthy that this EMIC, although parameterized and simplified, includes 14 levels in the ocean; further, its global ocean heat uptake and climate sensitivity are near the mean of available complex models, and its computed timescales for uptake of tracers into the ocean have been shown to compare well to observations (16). A recent study (17) explored the response of one AOGCM to a sudden stop of all forcing, and the Bern 2.5CC EMIC shows broad similarities in computed warming to that study (see Fig. S1), although there are also differences in detail. The climate sensitivity (which characterizes the long-term absolute warming response to a doubling of atmospheric carbon dioxide concentrations) is 3 °C for the model used here. Our results should be considered illustrative and exploratory rather than fully quantitative given the limitations of the EMIC and the uncertainties in climate sensitivity. Results One Illustrative Scenario to 2050. In the absence of mitigation policy, concentrations of the three major greenhouse gases, carbon dioxide, methane, and nitrous oxide can be expected to increase in this century. If emissions were to cease, anthropogenic CO2 would be removed from the atmosphere by a series of processes operating at different timescales (18). Over timescales of decades, both the land and upper ocean are important sinks. Over centuries to millennia, deep oceanic processes become dominant and are controlled by relatively well-understood physics and chemistry that provide broad consistency across models (see, for example, Fig. S2 showing how the removal of a pulse of carbon compares across a range of models). About 20% of the emitted anthropogenic carbon **remains in the atmosphere for** many **thousands of years** (with a range across models including the Bern 2.5CC model being about 19 4% at year 1000 after a pulse emission; see ref. 19), until much slower weathering processes affect the carbonate balance in the ocean (e.g., ref. 18). Models with stronger carbon/climate feedbacks than the one considered here could display larger and more persistent warmings due to both CO2 and non-CO2 greenhouse gases, through reduced land and ocean uptake of carbon in a warmer world. Here our focus is not on the strength of carbon/climate feedbacks that can lead to differences in the carbon concentration decay, but rather on the factors that control the climate response to a given decay. The removal processes of other anthropogenic gases including methane and nitrous oxide are much more simply described by exponential decay constants of about 10 and 114 y, respectively (1), due mainly to known chemical reactions in the atmosphere. In this illustrative study, we do not include the feedback of changes in methane upon its own lifetime (20). We also do not account for potential interactions between CO2 and other gases, such as the production of carbon dioxide from methane oxidation (21), or changes to the carbon cycle through, e.g., methane/ozone chemistry (22). Fig. 1 shows the computed future global warming contributions for carbon dioxide, methane, and nitrous oxide for a midrange scenario (23) of projected future anthropogenic emissions of these gases to 2050. Radiative forcings for all three of these gases, and their spectral overlaps, are represented in this work using the expressions assessed in ref. 24. In 2050, the anthropogenic emissions are stopped entirely for illustration purposes. The figure shows nearly irreversible warming for at least 1,000 y due to the imposed carbon dioxide increases, as in previous work. **All published studies to date**, which use multiple EMICs and one AOGCM, show largely irreversible warming due to future carbon dioxide increases (to within about 0.5 °C) on a timescale of at least 1,000 y (3–5, 25, 26). Fig. 1 shows that the calculated future warmings due to anthropogenic CH4 and N2O also persist notably longer than the lifetimes of these gases. The figure illustrates that emissions of key non-CO2 greenhouse gases such as CH4 or N2O could lead to warming that both temporarily exceeds a given stabilization target (e.g., 2 °C as proposed by the G8 group of nations and in the Copenhagen goals) and remains present longer than the gas lifetimes even if emissions were to cease. A number of recent studies have underscored the important point that reductions of non-CO2 greenhouse gas emissions are an approach that can indeed reverse some past climate changes (e.g., ref. 27). Understanding how quickly such reversal could happen and why is an important policy and science question. Fig. 1 implies that the use of policy measures to reduce emissions of short-lived gases will be less effective as a rapid climate mitigation strategy than would be thought if based only upon the gas lifetime. Fig. 2 illustrates the factors influencing the warming contributions of each gas for the test case in Fig. 1 in more detail, by showing normalized values (relative to one at their peaks) of the warming along with the radiative forcings and concentrations of CO2 , N2O, and CH4 . For example, about two-thirds of the calculated warming due to N2O is still present 114 y (one atmospheric lifetime) after emissions are halted, despite the fact that its excess concentration and associated radiative forcing at that time has dropped to about one-third of the peak value.

### Tech Solves 2NC

**Long timeframe means intervening actors and tech solve**

**Michaels 7** – Cato senior fellow (Patrick, 2/2, Live with Climate Change, http://www.cato.org/pub\_display.php?pub\_id=7502)

Consequently, the best policy is to live with some modest climate change now and encourage economic development, which will generate the capital necessary for investment in the more efficient technologies of the future.

Fortunately, we have more time than the alarmists suggest. The warming path of the planet falls at the lowest end of today's U.N. projections. In aggregate, our computer models tell us that once warming is established, it tends to take place at a constant, not an increasing, rate. Reassuringly, the rate has been remarkably constant, at 0.324 degrees F per decade, since warming began around 1975. The notion that we must do "something in 10 years," repeated by a small but vocal band of extremists, enjoys virtually no support in the truly peer reviewed scientific literature.

Rather than burning our capital now for no environmental gain (did someone say "ethanol?"), let's encourage economic development so people can invest and profit in our more efficient future.

People who invested in automobile companies that developed hybrid technology have been rewarded handsomely in the past few years, and there's no reason to think environmental speculators won't be rewarded in the future, too.

**No impact to Co2 and it doesn’t cause warming**

**Happer, Ph.D. in Physics, 11**—Chairman of the Board of Directors (GMI); Cyrus Fogg Brackett Professor of Physics, Princeton University, Ph.D. in Physics from Princeton (William, 23 May 2011, The Truth About Greenhouse Gases, http://www.marshall.org/article.php?id=953, RBatra)

Although human beings and many other animals would do well with no CO2 at all in the air, there is an upper limit that we can tolerate. Inhaling air with a concentration of a few percent, similar to the concentration of the air we exhale, hinders the diffusional exchange of CO2 between the blood and gas in the lung. Both the United States Navy (for submariners) and nasa (for astronauts) have performed extensive studies of human tolerance to CO2. As a result of these studies, the Navy recommends an upper limit of about 8000 ppm for cruises of ninety days, and nasa recommends an upper limit of 5000 ppm for missions of one thousand days, both assuming a total pressure of one atmosphere. Higher levels are acceptable for missions of only a few days.

We conclude that atmospheric CO2 levels should be above 150 ppm to avoid harming green plants and below about 5000 ppm to avoid harming people. That is a very wide range, and our atmosphere is much closer to the lower end than to the upper end. The current rate of burning fossil fuels adds about 2 ppm per year to the atmosphere, so that getting from the current level to 1000 ppm would take about 300 years—and 1000 ppm is still less than what most plants would prefer, and much less than either the nasa or the Navy limit for human beings.

Yet there are strident calls for immediately stopping further increases in CO2 levels and reducing the current level. As we have discussed, animals would not even notice a doubling of CO2 and plants would love it. The supposed reason for limiting it is to stop global warming—or, since the predicted warming has failed to be nearly as large as computer models forecast, to stop climate change. Climate change itself has been embarrassingly uneventful, so another rationale for reducing CO2 is now promoted: to stop the hypothetical increase of extreme climate events like hurricanes or tornados. But this does not necessarily follow. The frequency of extreme events has either not changed or has decreased in the 150 years that CO2 levels have increased from 270 to 390 ppm.

Let me turn to some of the problems the non-pollutant CO2 is supposed to cause. More CO2 is supposed to cause flooded cities, parched agriculture, tropical diseases in Alaska, etc., and even an epidemic of kidney stones. It does indeed cause some warming of our planet, and we should thank Providence for that, because without the greenhouse warming of CO2 and its more potent partners, water vapor and clouds, the earth would be too cold to sustain its current abundance of life.

Other things being equal, more CO2 will cause more warming. The question is how much warming, and whether the increased CO2 and the warming it causes will be good or bad for the planet.

The argument starts something like this. CO2 levels have increased from about 280 ppm to 390 ppm over the past 150 years or so, and the earth has warmed by about 0.8 degree Celsius during that time. Therefore the warming is due to CO2. But **correlation is not causation**. Roosters crow every morning at sunrise, but that does not mean the rooster caused the sun to rise. The sun will still rise on Monday if you decide to have the rooster for Sunday dinner.

There have been many warmings and coolings in the past when the CO2 levels did not change. A well-known example is the medieval warming, about the year 1000, when the Vikings settled Greenland (when it was green) and wine was exported from England. This warm period was followed by the “little ice age” when the Thames would frequently freeze over during the winter. **There is no evidence for significant increase of CO2 in the medieval warm period, nor for a significant decrease at the time of the subsequent little ice age.** Documented famines with millions of deaths occurred during the little ice age because the cold weather killed the crops. Since the end of the little ice age, the earth has been warming in fits and starts, and humanity’s quality of life has improved accordingly.

A rare case of good correlation between CO2 levels and temperature is provided by ice-core records of the cycles of glacial and interglacial periods of the last million years of so. But these records show that **changes in temperature preceded changes in CO2 levels, so that the levels were an effect of temperature changes**. This was probably due to outgassing of CO2 from the warming oceans and the reverse effect when they cooled.

#### Cosmic waves cause warming, emanating from exploding stars

**Dillow 12** [Clay, 9/6/12, Popular Science, “Global Warming Could Be Linked to the Number of Exploding Stars in the Sky”]

As we enter the high season of electoral politics, you’re going to hear things about global warming that may seem a bit dubious--that it doesn’t exist, that it exists and George W. Bush invented it, that cataclysmic climate change has already occurred and we are all doomed, that climate change is the result of the failed stimulus, etc. But an astrophysicist working on one of the cosmos greatest mysteries has another theory that might sound equally implausible on its face, but actually makes some sense: that we can measure future global warming based on the number of exploding stars we see in the sky.¶ Dr. Charles Wang of the University of Aberdeen has put forth a new theory concerning supernova that involves a Higgs Boson-like mystery particle that is scheduled to be tested at CERN. That’s interesting, but perhaps more intriguing is the idea that his theory could aid in our understanding of where global warming originates and where it is going.¶ Technology, Clay Dillow, astrophysics, climate change, global warming, Space, supernovaeIt turns out exploding stars elsewhere in the universe have an effect on the temperature of Earth’s atmosphere. When stars explode elsewhere, the massive amount of cosmic rays created affect space weather in that corner of the cosmos, making it cloudier. That cloudiness shades Earth from other cosmic waves that are likely impacting the atmosphere here. The cloudier it is out there, the cooler Earth’s atmosphere is. So, the theory goes, fewer star explosions equals a warmer atmosphere. And a warmer climate.¶ That doesn’t help us much from a policy perspective. We don’t yet fully understand the mechanisms by which individual stars go supernova, and we certainly don’t have the means to control star explosions. But since we do record these explosions--roughly one per year--we could use that data to help predict future changes in climate.

### Reso wars

#### No risk of resource wars

**Pinker 11**—Harvard College Professor, Johnstone Family Professor in the Department of Psychology at Harvard University (Steven, © 2011, The Better Angels of our Nature: Why Violence has Declined, RBatra)

Once again it seems to me that the appropriate response is “maybe, but maybe not.” Though climate change can cause plenty of misery and deserves to be mitigated for that reason alone, **it will not necessarily lead to armed conflict**. The political scientists who track war and peace, such as Halvard Buhaug, Idean Salehyan, Ole Theisen, and Nils Gleditsch, are skeptical of the popular idea that people fight wars over scarce resources.290 Hunger and resource shortages are tragically common in sub-Saharan countries such as Malawi, Zambia, and Tanzania, but wars involving them are not. Hurricanes, floods, droughts, and tsunamis (such as the disastrous one in the Indian Ocean in 2004) do not generally lead to armed conflict. The American dust bowl in the 1930s, to take another example, caused plenty of deprivation but no civil war. And while temperatures have been rising steadily in Africa during the past fifteen years, civil wars and war deaths have been falling. Pressures on access to land and water can certainly cause **local skirmishes, but a genuine war requires that hostile forces be organized and armed**, and that depends more on the influence of bad governments, closed economies, and militant ideologies than on the sheer availability of land and water. Certainly any connection to terrorism is in the imagination of the terror warriors: terrorists tend to be underemployed lower-middle-class men, not subsistence farmers.291 As for genocide, the Sudanese government finds it convenient to blame violence in Darfur on desertification, distracting the world from its own role in tolerating or encouraging the ethnic cleansing.

In a regression analysis on armed conflicts from 1980 to 1992, Theisen found that conflict was more likely if a country was poor, populous, politically unstable, and abundant in oil, but not if it had suffered from droughts, water shortages, or mild land degradation. (Severe land degradation did have a small effect.) Reviewing analyses that examined a large number (N) of countries **rather than cherry-picking one or two**, he concluded, “**Those who foresee doom, because of the relationship between resource scarcity and violent internal conflict, have very little support in the large-N literature**.” Salehyan adds that relatively inexpensive advances in water use and agricultural practices in the developing world can yield massive increases in productivity with a constant or even shrinking amount of land, and that better governance can mitigate the human costs of environmental damage, as it does in developed democracies. Since the state of the environment is at most one ingredient in a mixture that depends far more on political and social organization, resource wars are far from inevitable, even in a climate-changed world.

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**No resource wars—reject their method**

**Barnett 2009** (Thomas, visiting scholar at U Tennessee's Howard Baker Center, The Daily Sentinel, "Threat of great power war recedes" http://www.gjsentinel.com/opin/content/news/opinion/stories/2009/03/21/barnett\_power\_war.html?cxtype=rss&cxsvc=7&cxcat=9)

Why do I so casually dismiss “resource wars” as a strategic planning principle? Remember when Cold Warriors predicted we’d fight the Soviets across the “arc of crisis” for precious resources? Well, back then, both sides lived within miniature versions of today’s global economy. In that bifurcated world economy, zero-sum resource wars were entirely plausible. That bifurcated world no longer exists, as evidenced by the recent financial contagion. In globalization, demand determines power more than supply. Don’t believe me? Imagine a world where there’s no Chinese demand for U.S. debt or no U.S. demand for Chinese exports. Dreaming up future “resource wars” to obviate our military’s necessary adjustment to this era’s security tasks will not render them moot. Indeed, like Somalia’s recent pirate epidemic, they invariably attract the collaborative efforts of other great powers, like China and India, which have no choice but to defend their growing economic networks.

### ag—tech solves

**Tech solves agriculture**

**Simon 96** (Julian, Robert H. Smith School of Business, University of Maryland, The Ultimate Resource II: People, Materials, and Environment, http://www.rhsmith.umd.edu/faculty/jsimon/Ultimate\_Resource/)

The possibilities already shown to be feasible are astounding. For example, one might insert into a potato genes from a moth that affect the potato's coloring. Other genes might make proteins in a potato with the full complement of amino acids that humans need - giving the benefits of meat and potatoes by eating the potatoes alone. Please keep in mind that this technology has been developed after only a few decades of work on the topic, and only a little more than a century after the first scientific knowledge of genetics. Potential progress in the future - even within the next few decades and centuries - is awesome. Doomsaying forecasts about population growth outstripping the food supply that take no account of these possibilities surely are seriously inadequate.

### Econ

**Leaders will terminate rivalries to free up money and refocus on the economy**

**Bennett and Nordstrom 2000** – Department of Political Science at Penn State (Scott and Timothy, Journal of Conflict Resolution, “Foreign Policy Substitutability and Internal Economic Problems in Enduring Rivalries,” February 2000, EBSCO)

In this analysis, we focus on using economic conditions to understand when rivalries are likely to escalate or end. Rivalries are an appropriate set of cases to use when examining substitutability both because leaders in rival states have clearly substitutable choices and because rivalries are a set of cases in which externalization is a particularly plausible policy option.7 In particular, when confronted with domestic problems, leaders in a rivalry have the clear alternatives of escalating the conflict with the rival to divert attention or to work to settle the rivalry as a means of freeing up a substantial amount of resources that can be directed toward solving internal problems. In the case of the diversion option, rivals provide logical, believable actors for leaders to target; the presence of a clear rival may offer unstable elites a particularly inviting target for hostile statements or actual conflict as necessary. The public and relevant elites already consider the rival a threat or else the rivalry would not have continued for an extended period; the presence of disputed issues also provides a casus belli with the rival that is always present. Rivals also may provide a target where the possible costs and risks of externalization are relatively controlled. If the goal is diversion, leaders will want to divert attention without provoking an actual (and expensive) war. Over the course of many confrontations, rival states may learn to anticipate response patterns, leading to safer disputes or at least to leaders believing that they can control the risks of conflict when they initiate a new confrontation. In sum, rivals provide good targets for domestically challenged political leaders. This leads to our first hypothesis, which is as follows: *Hypothesis 1*: Poor economic conditions lead to diversionary actions against the rival. Conflict settlement is also a distinct route to dealing with internal problems that leaders in rivalries may pursue when faced with internal problems. Military competition between states requires large amounts of resources, and rivals require even more attention. Leaders may choose to negotiate a settlement that ends a rivalry to free up important resources that may be reallocated to the domestic economy. In a “guns versus butter” world of economic trade-offs, when a state can no longer afford to pay the expenses associated with competition in a rivalry, it is quite rational for leaders to reduce costs by ending a rivalry. This gain (a peace dividend) could be achieved at any time by ending a rivalry. However, such a gain is likely to be most important and attractive to leaders when internal conditions are bad and the leader is seeking ways to alleviate active problems. Support for policy change away from continued rivalry is more likely to develop when the economic situation sours and elites and masses are looking for ways to improve a worsening situation. It is at these times that the pressure to cut military investment will be greatest and that state leaders will be forced to recognize the difficulty of continuing to pay for a rivalry. Among other things, this argument also encompasses the view that the cold war ended because the Union of Soviet Socialist Republics could no longer compete economically with the United States. *Hypothesis 2*: Poor economic conditions increase the probability of rivalry termination. Hypotheses 1 and 2 posit opposite behaviors in response to a single cause (internal economic problems). As such, they demand a research design that can account for substitutability between them.

**There in so such thing as the global economy—economic links are regional**

**Fletcher 2010** – Adjunct Fellow at the San Francisco office of the U.S. Business and Industry Council (7/7, Ian, Huffington Post, “The myth of the global economy”, http://www.huffingtonpost.com/ian-fletcher/the-myth-of-the-global-ec\_b\_638546.html, props to Mustafa for the cite, WEA)

If there's one thing everyone knows these days, whether they're happy about it or not, it's that we live in a "global" economy. This fact is taken as so obvious that anyone who disputes it is regarded as not so much wrong as simply ignorant -- not even worth arguing with. So it may come as a shock to many that, in reality, the cliche that we live in a borderless global economy does not survive serious examination. The key is to ignore the Thomas Friedmanesque rhetoric the media is flooded with and get down to some hard numbers. The easiest hard number is this: Because the U.S. is roughly 25 percent of the world economy, a truly borderless world would imply that imports and exports would each make up 75 percent of our economy, since our purchase and sale transactions would be distributed around the world. This would entail a total trade level (imports plus exports) of 150 percent of GDP. Instead, our total trade level is 29 percent: imports are 17 percent and exports 12 percent. So our economy is nowhere near borderless. Furthermore, as our trade is almost certainly destined to be balanced by import contraction, rather than an export boom, in the next few years, our trade level is almost certainly poised to go down, not up. So unless the U.S. can somehow magically find a way to keep sucking in $300 to $700 billion a year in imports it doesn't pay for with exports, America in a few years will be importing significantly less and will be a less globalized economy. A truly unified world economy would also mean that rates of interest and profit would have to be equal everywhere--because if they weren't, the differences would be arbitraged away by the financial markets. But this is nowhere near being the case: Interest rates and corporate profits vary widely around the world. Economists James Anderson and Eric van Wincoop have calculated that the average cost of international trade (ignoring tariffs) is the equivalent of a 170 percent tariff. Even between adjacent and similar nations like the U.S. and Canada, national borders still count: Canadian economist John McCallum has documented that trade between Canadian provinces is on average 20 times as large as the corresponding trade between Canadian provinces and American states. And much of international trade is interregional anyway, not global, being centered on European, North American, and East Asian blocs; this is true for just under 50 percent of both agriculture and manufactured goods. In reality, the world economy remains what it has been for a very long time: a thin crust of genuinely global economy (more visible than its true size due to its concentration in media, finance, technology, and luxury goods) over a network of regionally-linked national economies, over vast sectors of every economy that are not internationally traded at all (70 percent of the U.S. economy, for example). On present trends, it will remain roughly this way for the rest of our lives. The world economy in the early 21st century is not even remotely borderless. Another stubborn reality is that, contrary to what some people seem to think, the nation-state is a long way from being economically irrelevant. Most fundamentally, it remains relevant to people because most people still live in the nation where they were born, which means that their economic fortunes depend upon wage and consumption levels within that one society. Unemployed Americans are learning this the hard way right now. Capital is a similar story. Even in the early 21st century, it hasn't been globalized nearly as much as often imagined. And it also cares very much about where it lives, frequently for the same reasons people do. (Few people wish to live or invest in Zimbabwe; many people wish to live and invest in California.) For a start, because 70 percent of America's capital is human capital, a lot of capital behaves exactly as people do, simply because it is people. Another 12 percent has been estimated by the World Bank to be social capital, the value of institutions and knowledge not assignable to individuals. So although liquid financial capital can indeed flash around the world in the blink of an electronic eye, this is only a fraction (under 10 percent) of any developed nation's capital stock. Even most nonhuman capital resides in things like real estate, infrastructure, physical plant, and types of financial capital that don't flow overseas -- or don't flow very much. (Economists call this "don't flow very much" phenomenon home bias, and it is well documented.) As a result, the output produced by all this capital is still largely tied to particular nations. So although capital mobility certainly causes big problems of its own, it is nowhere near big enough to literally abolish the nation-state as an economic unit. Will it do so one day? Even this is unlikely. Even where famously dematerializing and globalizing assets, like fiber optic telecom lines, are added -- assets that supposedly make physical location irrelevant--they are still largely being added where existing agglomerations of capital are. For example, although fiber optic backbones have gone into places like Bangalore, India, which were not global economic centers a generation ago, big increments of capacity have also gone into places like Manhattan, Tokyo, Silicon Valley, and Hong Kong, which were already important. As a result, existing geographic agglomerations of capital are largely self-reinforcing and here to stay, even if new ones come into being in unexpected places (often through decisions made by national governments). And these agglomerations have national shape because of past history; legacy effects can be extremely durable. Previous technological revolutions, such as the worldwide spread of railroads, were at least as big as current innovations like the Internet, and they didn't abolish the nation-state. Ironically, the enduring relevance of the national economy is clearest in some of the "poster child" countries of globalization, like Japan, Taiwan, South Korea, Singapore, and Ireland. In each of these nations, economic success was the product of policies enacted by governments that were in some sense nationalist. Japan industrialized after the Meiji Restoration of 1868 to avoid being colonized by some Western power. Taiwan did it out of fear of mainland China. South Korea did it out of fear of North Korea. Ireland did it to escape economic domination by England. In each case, the driving force was not simply desire for profit. This exists in every society (including resource-rich basket cases like Nigeria, where it merely produces gangsterism), but does not reliably crystallize into the policies needed for economic growth. The driving force was national political needs that found a solution in economic development.

**No econ impact**

Robert Jervis 11, Professor in the Department of Political Science and School of International and Public Affairs at Columbia University, December 2011, “Force in Our Times,” Survival, Vol. 25, No. 4, p. 403-425

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy and bring back old-fashioned beggar-my-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a preexisting high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

### Solvency

#### Distributed generation can’t solve – multiple technical and civic barriers

Christopher **Flavin**, Researcher at the Worldwatch Institute **2001** [State of the World 2000 ed by L Brown. Cha 7 “Sizing up Micropower” http://www.worldwatch.org/node/1039

Additional policies are required to prevent utilities from unfairly blocking micropower development. Rules preventing access to the network must be rewritten, and utilities should be required to offer straightforward “power purchase” contracts for micropower systems, rather than discouraging them with unnecessarily dense legal documents. Additional fees, used by utilities to penalize customers who reduce their purchases of grid power, need to be minimized. The state of Massachusetts, for example, has reduced “stranded cost” charges, which fund the retirement of uneconomic plants, for customers who use on-site systems.60 Other obstacles to micropower stem from siting, permitting, and emissions regulations that were designed before micropower became an option. Small-scale electricity is not accounted for in most building, electrical, and safety regulations, nor do local code and zoning officials tend to be familiar with the technology. U.S. homeowner associations concerned about lower property values often retain restrictions on modifications—such as solar roofing— well after developments have been finished. Land use planning and zoning laws favor the right to build over the “solar access” of neighboring property owners. Environmental regulations in many nations need to be revamped to credit the reduced pollution that results from deploying efficient small-scale systems.61

### Cyber

**Cyberterror unlikely – terrorists are not tech-savvy and doesn’t have shock value**

**Conway 11** – Lecturer in International Relations in the School of Law & Government at Dublin City University (Maura, “Against Cyberterrorism” Communications of the ACM, Vol. 54 No. 2, Pages 26-28, http://cacm.acm.org.proxy.lib.umich.edu/magazines/2011/2/104396-against-cyberterrorism/fulltext)

In my opinion, the three most compelling arguments against cyberterrorism are: The argument of Technological Complexity; The argument regarding 9/11 and the Image Factor; and The argument regarding 9/11 and the Accident Issue. The first argument is treated in the academic literature; the second and third arguments are not, but ought to be. None of these are angles to which journalists appear to have devoted a lot of thought or given adequate consideration. In the speech mentioned earlier, FBI Director Mueller observed "Terrorists have shown a clear interest in pursuing hacking skills. And they will either train their own recruits or hire outsiders, with an eye toward combining physical attacks with cyber attacks." That may very well be true, but the argument from Technological Complexity underlines that 'wanting' to do something is quite different from having the ability to do the same. Here's why: Violent jihadis' IT knowledge is not superior. For example, in research carried out in 2007, it was found that of a random sampling of 404 members of violent Islamist groups, 196 (48.5%) had a higher education, with information about subject areas available for 178 individuals. Of these 178, some 8 (4.5%) had trained in computing, which means that out of the entire sample, less than 2% of the jihadis came from a computing background.3 And not even these few could be assumed to have mastery of the complex systems necessary to carry out a successful cyberterrorist attack. Real-world attacks are difficult enough. What are often viewed as relatively unsophisticated real-world attacks undertaken by highly educated individuals are routinely unsuccessful. One only has to consider the failed car bomb attacks planned and carried out by medical doctors in central London and at Glasgow airport in June 2007. Hiring hackers would compromise operational security. The only remaining option is to retain "outsiders" to undertake such an attack. This is very operationally risky. It would force the terrorists to operate outside their own circles and thus leave them ripe for infiltration. Even if they successfully got in contact with "real" hackers, they would be in no position to gauge their competency accurately; they would simply have to trust in same. This would be very risky. So on the basis of technical know-how alone cyberterror attack is not imminent, but this is not the only factor one must take into account. The events of Sept. 11, 2001 underscore that for a true terrorist event spectacular moving images are crucial. The attacks on the World Trade Center were a fantastic piece of performance violence; look back on any recent roundup of the decade and mention of 9/11 will not just be prominent, but pictures will always be provided. The problem with respect to cyber-terrorism is that many of the attack scenarios put forward, from shutting down the electric power grid to contaminating a major water supply, fail on this account: they are unlikely to have easily captured, spectacular (live, moving) images associated with them, something we—as an audience—have been primed for by the attack on the World Trade Center on 9/11. The only cyberterrorism scenario that would fall into this category is interfering with air traffic control systems to crash planes, but haven't we seen that planes can much more easily be employed in spectacular "real-world" terrorism? And besides, aren't all the infrastructures just mentioned much easier and more spectacular to simply blow up? It doesn't end there, however. For me, the third argument against cyberterrorism is perhaps the most compelling; yet it is very rarely mentioned.

#### Cyber Attacks are hype – they aren’t easy to carry out and defenses are improving

Jason **FRITZ** 20**09** (Masters of International Relations – Bond and Bachelor’s of Science – St. Cloud, “Hacking Nuclear Command and Control,” <http://www.icnnd.org/research/Jason_Fritz_Hacking_NC2.pdf>)

, media organisations, and security companies often use the threat of cyber terrorism to further their own agendas. The entertainment industry has also capitalized on cyber fears, creating exaggerated and over simplistic scenarios, such as the films War Games and Die Hard 4. Additionally, the media often reports cyber criminals, hackers, statesponsored hackers, and hacktivists all under the heading of cyber terrorists. Sensitive government, military, and intelligence information tend to be maintained on closed networks, networks separated from the broader internet. While these systems may be compromised, they are far from simple. Governments are aware of the cyber threat, and have been taking steps to increase personnel screening, inspections, inter-agency communication, emergency response, scrutiny of sensitive hi-tech foreign parts production, and overall computer network defence.

**Even if they wanted to – they can’t do it**

**Weimann 04** – (Dec. 2004, Gabriel Weimann is a senior fellow at the United States Institute of Peace and professor of communication at the University of Haifa, Israel, “Cyberterrorism: How Real Is the Threat?” <http://www.usip.org/files/resources/sr119.pdf> )

To assess the potential threat of cyberterrorism, experts such as Denning suggest that two questions be asked: Are there targets that are vulnerable to cyberattacks? And are there actors with the capability and motivation to carry out such attacks? The answer to the first question is yes: critical infrastructure systems are complex and therefore bound to contain weaknesses that might be exploited, and even systems that seem “hardened” to outside manipulation might be accessed by insiders, acting alone or in concert with terrorists, to cause considerable harm. But what of the second question? According to Green, “few besides a company’s own employees possess the specific technical know-how required to run a specialized SCADA system.” There is, of course, the possibility of terrorists recruiting employees or ex-employees of targeted companies or sys- tems. In April 2002, an Australian man attempted to use the Internet to release a million gallons of raw sewage along Queensland’s Sunshine Coast. The police discovered that he had worked for the company that designed the sewage treatment plant’s control software. It is possible, of course, that such disgruntled employees might be recruited by terrorist groups, but even if the terrorists did enlist inside help, the degree of damage they could cause would still be limited. As Green argues, the employees of companies that handle power grids, oil and gas utilities, and communications are well rehearsed in dealing with the fallout from hurricanes, floods, tornadoes, and other natural disasters. They are also equally adept at containing and remedying problems that stem from human action. Denning draws our attention to a report, “Cyberterror: Prospects and Implications,” published in August 1999 by the Center for the Study of Terrorism and Irregular Warfare at the Naval Postgraduate School (NPS) in Monterey, California. The report, explains Den- ning, shows that terrorists generally lack the wherewithal and human capital needed to mount attacks that involve more than annoying but relatively harmless hacks. The study examined five types of terrorist groups: religious, New Age, ethnonationalist separatist, revolutionary, and far-right extremist. Of these, only the religious groups were adjudged likely to seek the capacity to inflict massive damage. Hacker groups, the study deter- mined, are psychologically and organizationally ill suited to cyberterrorism, and any mas- sive disruption of the information infrastructure would run counter to their self-interest. A year later, in October 2000, the NPS group issued a second report, this one examining the decision-making process by which substate groups engaged in armed resistance develop new operational methods, including cyberterrorism. This report also shows that while sub- state groups may find cyberterror attractive as a nonlethal weapon, terrorists have not yet integrated information technology into their strategy and tactics and that significant barri- ers between hackers and terrorists may prevent their integration into one group. Another illustration of the limited likelihood of terrorists launching a highly damaging cyberattack comes from a simulation sponsored by the U.S. Naval War College. The col- lege contracted with a research group to simulate a massive cyberattack on the nation’s information infrastructure. Government hackers and security analysts met in July 2002 in Newport, R.I., and conducted a joint war game dubbed “Digital Pearl Harbor.” The results were far from devastating: the hackers failed to crash the Internet, although they did cause sporadic damage. According to a CNet.com report on the exercise published in August 2002, officials concluded that terrorists hoping to stage such an attack “would require a syndicate with significant resources, including $200 million, country-level intel- ligence and five years of preparation time.”

**Threat exaggeration – empirics prove**

Lawson 11 – Sean, Ph.D. Department of Communication University of Utah "BEYOND CYBER-DOOM: Cyberattack Scenarios and the Evidence of History" Jan 11 mercatus.org/sites/default/files/publication/beyond-cyber-doom-cyber-attack-scenarios-evidence-history\_1.pdf

Despite persistent ambiguity in cyber-threat perceptions, cyber-doom scenarios have remained an important tactic used by cybersecurity proponents. Cyber-doom scenarios are hypothetical stories about prospective impacts of a cyberattack and are meant to serve as cautionary tales that focus the attention of policy makers, media, and the public on the issue of cybersecurity. These stories typically follow a set pattern involving a cyberattack disrupting or destroying critical infrastructure. Examples include attacks against the electrical grid leading to mass blackouts, attacks against the financial system leading to economic losses or complete economic collapse, attacks against the transportation system leading to planes and trains crashing, attacks against dams leading floodgates to open, or attacks against nuclear power plants leading to meltdowns (Cavelty, 2007: 2). Recognizing that modern infrastructures are closely interlinked and interdependent, such scenarios often involve a combination of multiple critical infrastructure systems failing simultaneously, what is sometimes referred to as a “cascading failure.” This was the case in the “Cyber Shockwave” war game televised by CNN in February 2010, in which a computer worm Leaked U.S. diplomatic cables published by WikiLeaks.org seem to corroborate this accusation (Shane & Lehren, 2010).5 spreading among cell phones eventually led to serious disruptions of critical infrastructures (Gaylord, 2010). Even more ominously, in their recent book, Richard Clarke and Robert Knake (2010: 64–68) present a scenario in which a cyberattack variously destroys or seriously disrupts all U.S. infrastructure in only fifteen minutes, killing thousands and wreaking unprecedented destruction on U.S. cities. Surprisingly, some argue that we have already had attacks at this level, but that we just have not recognized that they were occurring. For example, Amit Yoran, former head of the Department of Homeland Security’s National Cyber Security Division, claims that a “cyber- 9/11” has already occurred, “but it’s happened slowly so we don’t see it.” As evidence, he points to the 2007 cyberattacks on Estonia, as well as other incidents in which the computer systems of government agencies or contractors have been infiltrated and sensitive information stolen (Singel, 2009). Yoran is not alone in seeing the 2007 Estonia attacks as an example of the cyberdoom that awaits if we do not take cyber threats seriously. The speaker of the Estonian parliament, Ene Ergma, has said that “When I look at a nuclear explosion, and the explosion that happened in our country in May, I see the same thing” (Poulsen, 2007). Cyber-doom scenarios are not new. As far back as 1994, futurist and best-selling author Alvin Toffler claimed that cyberattacks on the World Trade Center could be used to collapse the entire U.S. economy. He predicted that “They [terrorists or rogue states] won’t need to blow up the World Trade Center. Instead, they’ll feed signals into computers from Libya or Tehran or Pyongyang and shut down the whole banking system if they want to. We know a former senior intelligence official who says, ‘Give me $1 million and 20 people and I will shut down America. I could close down all the automated teller machines, the Federal Reserve, Wall Street, and most hospital and business computer systems’” (Elias, 1994). But we have not seen anything close to the kinds of scenarios outlinedby Yoran, Ergma, Toffler, and others. Terrorists did not use cyberattack against the World Trade Center; they used hijacked aircraft. And the attack of 9/11 did not lead to the long-term collapse of the U.S. economy; we would have to wait for the impacts of years of bad mortgages for a financial meltdown. Nor did the cyberattacks on Estonia approximate what happened on 9/11 as Yoran has claimed, and certainly not nuclear warfare as Ergma has claimed. In fact, a scientist at the NATO Co-operative Cyber Defence Centre of Excellence, which was established in Tallinn, Estonia in response to the 2007 cyberattacks, has written that the immediate impacts of those attacks were “minimal” or “nonexistent,” and that the “no critical services were permanently affected” (Ottis, 2010: 72). Nonetheless, many cybersecurity proponents continue to offer up cyber-doom scenarios that not only make analogies to weapons of mass destruction (WMDs) and the terrorist attacks of 9/11, but also hold out economic, social, and even civilizational collapse as possible impacts of cyberattacks. A report from the Hoover Institution has warned of so-called “eWMDs” (Kelly & Almann, 2008); the FBI has warned that a cyberattack could have the same impact as a “wellplaced bomb” (FOXNews.com, 2010b); and official DoD documents refer to “weapons of mass disruption,” implying that cyberattacks might have impacts comparable to the use of WMD (Chairman of the Joint Chiefs of Staff 2004, 2006). John Arquilla, one of the first to theorize cyberwar in the 1990s (Arquilla & Ronfeldt, 1997), has spoken of “a grave and growing capacity for crippling our tech-dependent society” and has said that a “cyber 9/11” is a matter of if, not when (Arquilla, 2009). Mike McConnell, who has claimed that we are already in an ongoing cyberwar (McConnell, 2010), has even predicted that a cyberattack could surpass the impacts of 9/11 “by an order of magnitude” (The Atlantic, 2010). Finally, some have even compared the 7 impacts of prospective cyberattacks to the 2004 Indian Ocean tsunami that killed roughly a quarter million people and caused widespread physical destruction in five countries (Meyer, 2010); suggested that cyberattack could pose an “existential threat” to the United States (FOXNews.com 2010b); and offered the possibility that cyberattack threatens not only the continued existence of the United States, but all of “global civilization” (Adhikari, 2009). In response, critics have noted that not only has the story about who threatens what, how, and with what potential impact shifted over time, but it has done so with very little evidence provided to support the claims being made (Bendrath, 2001, 2003; Walt, 2010). Others have noted that the cyber-doom scenarios offered for years by cybersecurity proponents have yet to come to pass and question whether they are possible at all (Stohl, 2007). Some have also questioned the motives of cybersecurity proponents. Various think tanks, security firms, defense contractors, and business leaders who trumpet the problem of cyber attacks are portrayed as selfinterested ideologues who promote unrealistic portrayals of cyber-threats (Greenwald, 2010)

### Meltdowns

**Chernboyl and Japan prove no impact to meltdowns**  
**Riedl 2011** (Jonathon, assistant editor at The Blaze, quoting Jay Lehr, science director at the Heartland Institute, “‘THIS PANIC HAS BEEN HORRIBLY OVERBLOWN’: SCIENTIST DECRIES NUKE ‘FEAR MONGERING’” <http://www.theblaze.com/stories/this-panic-has-been-horribly-overblown-scientist-decries-nuke-fear-mongering/>]  
  
Jay Lehr, science director at the Heartland Institute, has some advice for doomsayers wondering if radiation from the crippled Japanese nuke plants could mean massive local deaths and even cross the Pacific and reach America: calm down.

In an interview on Fox News today, Lehr told host Bill Hemmer that not only is the U.S. not at risk of experiencing nuclear fallout, but he also drew stark differences between atomic bombs and nuclear reactors.

“We only have to look at the worst nuclear disaster in history, that was Chernobyl, where there was no containment structure,” he said. “10 years later when all the facts were in there were less than 10 fatalities from that explosion — only people right near the plant were affected by the radiation, 1,000 people got leukemia, 998 were cured … . It was predicted that tens of thousands of people would get cancer … [but] this never happened. This is not an atomic bomb and people don’t understand a nuclear reactor is something very different than an atomic bomb.”

**No risk of meltdowns**

**Beller, 4** - Department of Mechanical Engineering, University of Nevada, Las Vegas (Dr. Denis E, “Atomic Time Machines: Back to the Nuclear Future,” 24 J. Land Resources & Envtl. L. 41, 2004)

No caveats, no explanation, not from this engineer/scientist. It's just plain safe! All sources of electricity production result in health and safety impacts. However, at the National Press Club meeting, Energy Secretary Richardson indicated that nuclear power is safe by stating, "I'm convinced it is." 45 Every nuclear scientist and engineer should agree with that statement. Even mining, transportation, and waste from nuclear power have lower impacts because of the difference in magnitude of materials. In addition, emissions from nuclear plants are kept to near zero. 46 If you ask a theoretical scientist, nuclear energy does have a potential tremendous adverse impact. However, it has had that same potential for forty years, which is why we designed and operate nuclear plants with multiple levels of containment and safety and multiple backup systems. Even the country's most catastrophic accident, the partial meltdown at Three Mile Island in 1979, did not injure anyone. 47 The fact is, Western-developed and Western-operated nuclear power is the safest major source of electricity production. Haven't we heard enough cries of "nuclear wolf" from scared old men and "the sky is radioactive" from  [\*50]  nuclear Chicken Littles? We have a world of data to prove the fallacy of these claims about the unsafe nature of nuclear installations.  
[SEE FIGURE IN ORIGINAL]  
Figure 2. Deaths resulting from electricity generation. 48  
Figure 2 shows the results of an ongoing analysis of the safety impacts of energy production from several sources of energy. Of all major sources of electricity, nuclear power has produced the least impact from real accidents that have killed real people during the past 30 years, while hydroelectric has had the most severe accident impact. 49 The same is true for environmental and health impacts. 50 Of all major sources of energy, nuclear energy has the least impacts on environment and health while coal has the greatest. 51 The low death  [\*51]  rate from nuclear power accidents in the figure includes the Chernobyl accident in the Former Soviet Union. 52

## 2nr

### 2nr cards

#### A consistent lead doesn’t mean it can’t change in the last 10 days

**Blumenthal, 10/27/12 –** editor of Pollster.com (Mark, “2012 Polls: When Is A Lead Really A Lead?” Huffington Post, <http://www.huffingtonpost.com/2012/10/27/2012-polls-lead_n_2031046.html>)

While the model currently reports high confidence in Obama's leads in those critical battleground states, it is important to remember the limitations of those statistics. They assume that the grand mean of all pollster measurements is unbiased, something that was true of the polling data in 2008 and 2004 but not as often before that. The confidence levels also tell us nothing about the possibility of trends that may develop over the next 10 days, such as whether those who are still undecided might "break" disproportionately toward one of the candidates as they cast their votes.

#### The new FERC rule allows states to effectively set their own rates. They are still limited to only charging the avoided cost, but they can set the avoided cost for renewables higher than the normal avoided cost to comply with renewables mandates

**Motl, 11 -** J.D., University of Wisconsin Law School (Bradley, “RECONCILING GERMAN-STYLE FEED-IN TARIFFS WITH PURPA” 28 Wis. Int'l L.J. 742, Winter, lexis)

The FERC has given states "great latitude" to determine a procedure for calculating a utility's "avoided cost." n152 This latitude comes from the state's authority to implement PURPA. n153 FERC has stated that determining if a rate was "above avoided cost was best left to the appropriate state or judicial forum." n154 FERC provides the state with a list of factors within its regulations that should be used to calculate avoided cost and maintains that the "factors shall, to the extent practical, be taken into account." n155 States retain discretion over how they apply these factors. As the Idaho Supreme Court held, FERC "provides no precise formula for calculating a utility's avoided cost." n156 For example, one factor is the relationship between the availability of a QF's energy and capacity compared to a utility's ability to avoid costs associated with deferring construction of new capacity or reducing the use of fossil fuels. n157 When determining the utility's avoided costs, states may account for environmental costs that a utility actually incurs, but will avoid by purchasing from a QF. n158 The list of avoided cost factors also includes "the availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods." n159 The use of these factors when determining a utility's avoided cost makes the process individualized to a utility's operation at a specific place and time. Because FERC's regulations require individualized avoided cost calculations for each utility, feed-in tariff rates that mandate a uniform value for all utilities may be facially invalid under PURPA and FERC regulations.

When a state's determination of an avoided cost is challenged, state courts tend to give a fair amount of deference to their state's public service commission. For example, the supreme court of North Carolina found that the North Carolina Utilities Commission's methodology for calculating avoided cost was appropriate even though it resulted in a total avoided cost of $ 1.39 million less than the Virginia State Corporation [\*762] Commission's avoided cost calculation for the same utility and QF. n160 The court held that FERC regulations require that each state ensure that a utility does not pay more than its avoided cost. n161 Furthermore, each state may use its own measures for calculating avoided cost, even for a utility operating in multiple states. n162

The supreme court of Idaho upheld the Idaho Public Utilities Commission's decision to calculate avoided cost based on one type of generating facility instead of another because the first type of facility represented what the Idaho commission decided was the utility's "actual avoided" costs. n163 The court refused to overturn the state agency's determination of avoided costs unless "it appears that the clear weight of the evidence is against the conclusion." n164 In a separate case, the supreme court of Idaho also affirmed the Idaho Commission's decision to set an avoided cost rate that was fixed for the entire length of contract between a utility and QF and was "not subject to the Commission's continuing jurisdiction." n165

The supreme court of New Hampshire held that the state Public Utilities Commission had the authority to approve rates that reflected a utility's avoided cost at the time a QF applied for a rate, even if that rate exceeded the utility's avoided costs in the subsequent rate order. n166 Furthermore, the court upheld the commission's decision to issue a "front-end loaded, long-term rate order" whose rate exceeded the utility's avoided cost in the early years of the contract, then declined in the later years of the contract. n167 A justification for the greater front-end rate is that the risk to the utility's ratepayers is balanced with the benefits of the QF project. n168 The court stated that it "will not reverse a decision of the [commission] ... unless the appealing party demonstrates by a clear preponderance of the evidence that the order was unjust or unreasonable." n169

A state's wide latitude when calculating avoided cost means it can effectively achieve desired feed-in tariff rates by justifying a greater [\*763] avoided cost. A state should review its process for calculating avoided cost to ensure it is including all the costs the utility would actually avoid when it buys power from a QF. For example, a state will likely find additional authority to raise avoided costs under the "reduction of fossil fuel use" factor of FERC's regulations. n170 A state can take into account all aspects of reducing fossil fuel use when calculating an avoided cost. A determination of the present and future value of renewable energy credits that count toward a utility's required renewable portfolio standard could increase the avoided cost value. As the federal government progresses toward cap-and-trade and carbon tax measures, a state can reassess the likely economic cost to the utility of complying with future carbon regulation. However, FERC cautions states that they "may not set avoided cost rates ... by imposing environmental adders or subtractors that are not based on real costs that would be incurred by utilities." n171

A fundamental element of PURPA is that it requires a state to calculate each utility's avoided cost separately. A state will not be able to set a single feed-in tariff rate that applies to all QFs of a certain type and size. In addition, FERC regulations set limits as to what factors a state can consider when determining an avoided cost. Even after a state justifies a new maximum avoided cost, the resulting value may still be much less than the state's desired feed-in tariff rate. But, reevaluating avoided cost from a broader point of view can raise the rate paid to a QF and may make a QF's renewable resource project profitable.

# Round 6 – Aff v Wake HQ

## 1ac

### Plan

#### The United States federal government should substantially increase loan guarantees for energy produced by integral fast reactors using the S-PRISM design in the United States.

### 1

#### Adv 1: Nuclear leadership

#### Nuclear power is inevitable – Inaction on IFRs is killing US nuclear leadership

**Shuster 11** [Joseph Shuster, founder of Minnesota Valley Engineering and Chemical Engineer, 9-8-2011, "Response to Draft Report From Obama’s Blue Ribbon Commission (BRC) on America’s Nuclear Future dated July 29, 2011," Beyond Fossil Fools]

Contrary to the commission’s declarations on the matter, the U.S. is in danger of losing its once ¶ strong nuclear leadership. As a result we would have less to say about how nuclear materials are ¶ to be managed in the world and that could expose the U.S. to some inconvenient if not downright ¶ dangerous consequences. China is now building a large pilot plant said to be identical to our ¶ successful EBR-II plant that proved the design of the IFR. Meanwhile in the U.S. after complete ¶ success, EBR II was shut down, not for technical reasons but for political reasons during the ¶ Clinton administration, a decision destined to be one of the worst in our nation’s history.¶ Much of the world is already committed to a nuclear future with some countries eagerly waiting ¶ to license the American version of Generation IV Fast Reactors—the IFR. We still have the best ¶ IFR technology in the world but have squandered much of our lead, partly by allowing a largely ¶ unqualified commission two years of useless deliberation. What we really did was give our ¶ competitors an additional two years to catch up.

#### IFR restores leadership on nuclear issues – key to contain proliferation

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "IFR FaD context – the need for U.S. implementation of the IFR," 2/18/10) http://bravenewclimate.com/2010/02/18/ifr-fad-context/-http://bravenewclimate.com/2010/02/18/ifr-fad-context/

ON THE NEED FOR U.S. IMPLEMENTATION OF THE INTEGRAL FAST REACTOR¶ The IFR ties into a very big picture — international stability, prevention of war, and avoiding “proliferation” (spread) of nuclear weapons.¶ – The need for energy is the basis of many wars, including the ones we are engaged in right now (Iraq and Afghanistan). If every nation had enough energy to give its people a decent standard of living, that reason for conflict would disappear.¶ – The only sustainable energy source that can provide the bulk of the energy needed is nuclear power.¶ – The current need is for more thermal reactors — the kind we now use.¶ – But for the longer term, to provide the growing amount of energy that will be needed to maintain civilization, the only proven way available today is with fast-reactor technology.¶ – The most promising fast-reactor type is the IFR – metal-fueled, sodium-cooled, with pyroprocessing to recycle its fuel.¶ – Nobody knows yet how much IFR plants would cost to build and operate. Without the commercial-scale demo of the IFR, along with rationalization of the licensing process, any claims about costs are simply hand-waving guesses.¶ \* \* \* \*¶ Background info on proliferation (of nuclear weapons). Please follow the reasoning carefully.¶ – Atomic bombs can be made with highly enriched uranium (90% U-235) or with good-quality plutonium (bomb designers want plutonium that is ~93% Pu-239).¶ – For fuel for an LWR, the uranium only has to be enriched to 3 or 4% U-235.¶ – To make a uranium bomb you don’t need a reactor — but you do need access to an enrichment facility or some other source of highly enriched uranium…¶ – Any kind of nuclear reactor can be used to make weapons-quality plutonium from uranium-238, but the uranium has to have been irradiated for only a very short period. In other words, nobody would try to make a plutonium weapon from ordinary spent fuel, because there are easier ways to get plutonium of much better quality.¶ – Plutonium for a weapon not only has to have good isotopic quality, it also has to be chemically uncontaminated. Thus the lightly irradiated fuel has to be processed to extract the plutonium in a chemically pure form. But mere possession of a reactor is not sufficient for a weapons capability — a facility using a chemical process called PUREX is also needed.¶ – Regardless of how many reactors a country has, it cannot have a weapons capability unless it has either the ability to enrich uranium or to do PUREX-type fuel reprocessing.¶ – Therefore, the spread of weapons capability will be strongly inhibited if the only enrichment and reprocessing facilities are in countries that already have a nuclear arsenal.¶ – But that can only happen if countries with reactors (and soon that will be most of the nations of the world) have absolutely ironclad guarantees that they can get the fuel they need even if they can’t make their own, regardless of how obnoxious their political actions might be.¶ – Such guarantees will have to be backed up by some sort of international arrangement, and that can only come to pass if there is effective leadership for the laborious international negotiations that will have to take place. (For a relevant discussion, see here)¶ – At present, the only nation that has a realistic potential to be such a leader is the United States.¶ – But a country cannot be such a leader in the political arena unless it is also in the technological forefront.¶ – The United States used to be the reactor-technology leader, but it abandoned that role in 1994 when it terminated the development of the IFR.¶ – Since then, other nations — China, India, Japan, South Korea, Russia, France — have proceeded to work on their own fast-reactor versions, which necessarily will involve instituting a fuel-processing capability.¶ – Thus the United States is being left behind, and is rapidly losing its ability to help assure that the global evolution of the technology of nuclear energy proceeds in a safe and orderly manner.¶ – But maybe it’s not too late yet. After all, the IFR is the fast-reactor technology with the post promise (for a variety of reasons), and is ready for a commercial-scale demonstration to settle some uncertainties about how to scale up the pyroprocess as needed, to establish better limits on the expected cost of production units, and to develop an appropriate, expeditious licensing process.¶ – Such a demo will require federal seed money. It’s time to get moving.

#### Several impacts – 1st prolif

#### Transition to IFRs create a global proliferation resistant fuel cycle

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "Q%26A on Integral Fast Reactors – safe, abundant, non-polluting power," 9/18/10) <http://bravenewclimate.com/2010/09/18/ifr-fad-7/-http://bravenewclimate.com/2010/09/18/ifr-fad-7/>

Thermal reactors with reprocessing would do at least a little better.¶ Recycling (it would be with the PUREX process, or an equivalent) could stretch the U-235 supply another few decades—but remember the consequences: growing stockpiles of plutonium, pure plutonium streams in the PUREX plants, and the creation of 100,000-year plutonium mines.¶ If you’re going to talk about “PUREX” and “plutonium mines” you should say what they are. First, what’s PUREX?¶ It’s a chemical process developed for the nuclear weapons program, to separate plutonium from everything else that comes out of a reactor. Weapons require very pure plutonium, and that’s what PUREX delivers. The pyroprocess used in the IFR is very different. It not only does not, it cannot, produce plutonium with the chemical purity needed for weapons.¶ Why do you keep referring to “chemical” purity?¶ Because chemical and isotopic quality are two different things. Plutonium for a weapon has to be pure chemically. Weapons designers also want good isotopic quality—that is, they want at least 93% of their plutonium to consist of the isotope Pu- 239. A chemical process does not separate isotopes.¶ I see. Now, what about the “plutonium mines?”¶ When spent fuel or vitrified reprocessing waste from thermal reactors is buried, the result is a concentrated geological deposit of plutonium. As its radioactivity decays, those deposits are sources of raw material for weapons, becoming increasingly attractive over the next 100,000 years and more (the half-life of Pu-239 being 24,000 years).¶ You listed, back at the beginning, some problems that the IFR would ameliorate. A lot of those problems are obviously related to proliferation of nuclear weapons.¶ Definitely. For instance, although thermal reactors consume more fuel than they produce, and thus are not called “breeders,” they inescapably are prolific breeders of plutonium, as I said. And that poses serious concerns about nuclear proliferation. And proliferation concerns are even greater when fuel from thermal reactors is recycled, since the PUREX method is used. IFRs have neither of those drawbacks.¶ Why does it seem that there is more proliferation-related concern about plutonium than about uranium? Can’t you make bombs from either?¶ Yes. The best isotopes for nuclear explosives are U-235, Pu- 239, and U-233. Only the first two of those, however, have been widely used. All the other actinide isotopes, if present in appreciable quantity, in one way or another complicate the design and construction of bombs and degrade their performance. Adequate isotopic purity is therefore important, and isotopic separation is much more difficult than chemical separation. Even so, with plutonium of almost any isotopic composition it is technically possible to make an explosive (although designers of military weapons demand plutonium that is at least 93% Pu-239), whereas if U-235 is sufficiently diluted with U-238 (which is easy to do and hard to undo), the mixture cannot be used for a bomb.¶ High-quality plutonium is the material of choice for a large and sophisticated nuclear arsenal, while highly enriched uranium would be one of the easier routes to a few crude nuclear explosives.¶ So why the emphasis on plutonium?¶ You’re asking me to read people’s minds, and I’m not good at that. Both uranium and plutonium are of proliferation concern.¶ Where is the best place for plutonium?¶ Where better than in a reactor plant—particularly an IFR facility, where there is never pure plutonium (except some, briefly, when it comes in from dismantled weapons), where the radioactivity levels are lethal, and where the operations are done remotely under an inert, smothering atmosphere? Once enough IFRs are deployed, there never will need to be plutonium outside a reactor plant—except for the then diminishing supply of plutonium left over from decades of thermal-reactor operation.¶ How does the IFR square with U.S. policy of discouraging plutonium production, reprocessing and use?¶ It is entirely consistent with the intent of that policy—to render plutonium as inaccessible for weapons use as possible. The wording of the policy, however, is now obsolete.¶ How so?¶ It was formulated before the IFR’s pyroprocessing and electrorefining technology was known—when “reprocessing” was synonymous with PUREX, which creates plutonium of the chemical purity needed for weapons. Since now there is a fuel cycle that promises to provide far-superior management of plutonium, the policy has been overtaken by events.¶ Why is the IFR better than PUREX? Doesn’t “recycling” mean separation of plutonium, regardless of the method?¶ No, not in the IFR—and that misunderstanding accounts for some of the opposition. The IFR’s pyroprocessing and electrorefining method is not capable of making plutonium that is pure enough for weapons. If a proliferator were to start with IFR material, he or she would have to employ an extra chemical separation step.¶ But there is plutonium in IFRs, along with other fissionable isotopes. Seems to me that a proliferator could take some of that and make a bomb.¶ Some people do say that, but they’re wrong, according to expert bomb designers at Livermore National Laboratory. They looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible—far, far harder than using today’s reactor-grade plutonium.¶ So? Why wouldn’t they use chemical separation?¶ First of all, they would need a PUREX-type plant—something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium—of any isotopic quality—this is probably the all-time, hands-down hardest.¶ The Long Term¶ Does the plutonium now existing and being produced by thermal reactors raise any proliferation concerns for the long term?¶ It certainly does. As I said earlier, burying the spent fuel from today’s thermal reactors creates geological deposits of plutonium whose desirability for weapons use is continually improving. Some 30 countries now have thermal-reactor programs, and the number will grow. To conceive of that many custodial programs being maintained effectively for that long is a challenge to the imagination. Since the IFR can consume plutonium, it can completely eliminate this long-term concern.¶ Are there other waste-disposal problems that could be lessened?¶ Yes. Some constituents of the waste from thermal reactors remain appreciably radioactive for thousands of years, leading to 10,000-year stability criteria for disposal sites. Waste disposal would be simpler if that time frame could be shortened. With IFR waste, the time of concern is less than 500 years.¶ What about a 1994 report by the National Academy of Sciences? The Washington Post said that the NAS report “denounces the idea of building new reactors to consume plutonium.”¶ That characterization of the report is a little strong, but it is true that the members of the NAS committee seem not to have been familiar with the plutonium-management potential of the IFR. They did, however, recognize the “plutonium mine” problem. They say (Executive Summary, p.3):¶ Because plutonium in spent fuel or glass logs incorporating high-level wastes still entails a risk of weapons use, and because the barrier to such use diminishes with time as the radioactivity decays, consideration of further steps to reduce the long-term proliferation risks of such materials is required, regardless of what option is chosen for [near-term] disposition of weapons plutonium. This global effort should include continued consideration of more proliferation-resistant nuclear fuel cycles, including concepts that might offer a long-term option for nearly complete elimination of the world’s plutonium stocks. The IFR, obviously, is just such a fuel cycle—a prime candidate for “continued consideration.”

#### We’re on the brink of rapid prolif – access to tech is inevitable and multilateral institutions fail

**CFR 12** [CFR 7-5-2012, "The Global Nuclear Nonproliferation Regime," Council on Foreign Relations]

Nuclear weapons proliferation, whether by state or nonstate actors, poses one of the greatest threats to international security today. Iran's apparent efforts to acquire nuclear weapons, what amounts to North Korean nuclear blackmail, and the revelation of the A.Q. Khan black market nuclear network all underscore the far-from-remote possibility that a terrorist group or a so-called rogue state will acquire weapons of mass destruction or materials for a dirty bomb.¶ The problem of nuclear proliferation is global, and any effective response must also be multilateral. Nine states (China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States) are known or believed to have nuclear weapons, and more than thirty others (including Japan, Germany, and South Korea) have the technological ability to quickly acquire them. Amid volatile energy costs, the accompanying push to expand nuclear energy, growing concerns about the environmental impact of fossil fuels, and the continued diffusion of scientific and technical knowledge, access to dual-use technologies seems destined to grow.¶ In the background, a nascent global consensus regarding the need for substantial nuclear arms reductions, if not complete nuclear disarmament, has increasingly taken shape. In April 2009, for instance, U.S. president Barack Obama reignited global nonproliferation efforts through a landmark speech in Prague. Subsequently, in September of the same year, the UN Security Council (UNSC) unanimously passed Resolution 1887, which called for accelerated efforts toward total nuclear disarmament. In February 2012, the number of states who have ratified the Comprehensive Test Ban Treaty increased to 157, heightening appeals to countries such as the United States, Israel, and Iran to follow suit.¶ Overall, the existing global nonproliferation regime is a highly developed example of international law. Yet, despite some notable successes, existing multilateral institutions have failed to prevent states such as India, Pakistan, and North Korea from "going nuclear," and seem equally ill-equipped to check Iran as well as potential threats from nonstate, terrorist groups. The current framework must be updated and reinforced if it is to effectively address today's proliferation threats, let alone pave the way for "the peace and security of a world without nuclear weapons."

#### New proliferators will be uniquely destabilizing -- guarantees conflict escalation.

Cimbala, ‘8

[Stephen, Distinguished Prof. Pol. Sci. – Penn. State Brandywine, Comparative Strategy, “Anticipatory Attacks: Nuclear Crisis Stability in Future Asia”, 27, InformaWorld]

If the possibility existed of a mistaken preemption during and immediately after the Cold War, between the experienced nuclear forces and command systems of America and Russia, then it may be a matter of even more concern with regard to states with newer and more opaque forces and command systems. In addition, the Americans and Soviets (and then Russians) had a great deal of experience getting to know one another’s military operational proclivities and doctrinal idiosyncrasies, including those that might influence the decision for or against war. Another consideration, relative to nuclear stability in the present century, is that the Americans and their NATO allies shared with the Soviets and Russians a commonality of culture and historical experience. Future threats to American or Russian security from weapons of mass destruction may be presented by states or nonstate actors motivated by cultural and social predispositions not easily understood by those in the West nor subject to favorable manipulation during a crisis. The spread of nuclear weapons in Asia presents a complicated mosaic of possibilities in this regard. States with nuclear forces of variable force structure, operational experience, and command-control systems will be thrown into a matrix of complex political, social, and cultural crosscurrents contributory to the possibility of war. In addition to the existing nuclear powers in Asia, others may seek nuclear weapons if they feel threatened by regional rivals or hostile alliances. Containment of nuclear proliferation in Asia is a desirable political objective for all of the obvious reasons. Nevertheless, the present century is unlikely to see the nuclear hesitancy or risk aversion that marked the Cold War, in part, because the military and political discipline imposed by the Cold War superpowers no longer exists, but also because states in Asia have new aspirations for regional or global respect.12 The spread of ballistic missiles and other nuclear-capable delivery systems in Asia, or in the Middle East with reach into Asia, is especially dangerous because plausible adversaries live close together and are already engaged in ongoing disputes about territory or other issues.13 The Cold War Americans and Soviets required missiles and airborne delivery systems of intercontinental range to strike at one another’s vitals. But short-range ballistic missiles or fighter-bombers suffice for India and Pakistan to launch attacks at one another with potentially “strategic” effects. China shares borders with Russia, North Korea, India, and Pakistan; Russia, with China and NorthKorea; India, with Pakistan and China; Pakistan, with India and China; and so on. The short flight times of ballistic missiles between the cities or military forces of contiguous states means that very little time will be available for warning and attack assessment by the defender. Conventionally armed missiles could easily be mistaken for a tactical nuclear first use. Fighter-bombers appearing over the horizon could just as easily be carrying nuclear weapons as conventional ordnance. In addition to the challenges posed by shorter flight times and uncertain weapons loads, potential victims of nuclear attack in Asia may also have first strike–vulnerable forces and command-control systems that increase decision pressures for rapid, and possibly mistaken, retaliation. This potpourri of possibilities challenges conventional wisdom about nuclear deterrence and proliferation on the part of policymakers and academic theorists. For policymakers in the United States and NATO, spreading nuclear and other weapons of mass destruction in Asia could profoundly shift the geopolitics of mass destruction from a European center of gravity (in the twentieth century) to an Asian and/or Middle Eastern center of gravity (in the present century).14 This would profoundly shake up prognostications to the effect that wars of mass destruction are now passe, on account of the emergence of the “Revolution in Military Affairs” and its encouragement of information-based warfare.15 Together with this, there has emerged the argument that large-scale war between states or coalitions of states, as opposed to varieties of unconventional warfare and failed states, are exceptional and potentially obsolete.16 The spread of WMD and ballistic missiles in Asia could overturn these expectations for the obsolescence or marginalization of major interstate warfare.

#### Extinction.

Krieger, ‘9

[David, Pres. Nuclear Age Peace Foundation and Councilor – World Future Council, “Still Loving the Bomb After All These Years”, 9-4, https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger]

Jonathan Tepperman’s article in the September 7, 2009 issue of Newsweek, “Why Obama Should Learn to Love the Bomb,” provides a novel but frivolous argument that nuclear weapons “may not, in fact, make the world more dangerous….” Rather, in Tepperman’s world, “The bomb may actually make us safer.” Tepperman shares this world with Kenneth Waltz, a University of California professor emeritus of political science, who Tepperman describes as “the leading ‘nuclear optimist.’” Waltz expresses his optimism in this way: “We’ve now had 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Actually, there were a number of proxy wars between nuclear weapons states, such as those in Korea, Vietnam and Afghanistan, and some near disasters, the most notable being the 1962 Cuban Missile Crisis. Waltz’s logic is akin to observing a man falling from a high rise building, and noting that he had already fallen for 64 floors without anything bad happening to him, and concluding that so far it looked so good that others should try it. Dangerous logic! Tepperman builds upon Waltz’s logic, and concludes “that all states are rational,” even though their leaders may have a lot of bad qualities, including being “stupid, petty, venal, even evil….” He asks us to trust that rationality will always prevail when there is a risk of nuclear retaliation, because these weapons make “the costs of war obvious, inevitable, and unacceptable.” Actually, he is asking us to do more than trust in the rationality of leaders; he is asking us to gamble the future on this proposition. “The iron logic of deterrence and mutually assured destruction is so compelling,” Tepperman argues, “it’s led to what’s known as the nuclear peace….” But if this is a peace worthy of the name, which it isn’t, it certainly is not one on which to risk the future of civilization. One irrational leader with control over a nuclear arsenal could start a nuclear conflagration, resulting in a global Hiroshima. Tepperman celebrates “the iron logic of deterrence,” but deterrence is a theory that is far from rooted in “iron logic.” It is a theory based upon threats that must be effectively communicated and believed. Leaders of Country A with nuclear weapons must communicate to other countries (B, C, etc.) the conditions under which A will retaliate with nuclear weapons. The leaders of the other countries must understand and believe the threat from Country A will, in fact, be carried out. The longer that nuclear weapons are not used, the more other countries may come to believe that they can challenge Country A with impunity from nuclear retaliation. The more that Country A bullies other countries, the greater the incentive for these countries to develop their own nuclear arsenals. Deterrence is unstable and therefore precarious. Most of the countries in the world reject the argument, made most prominently by Kenneth Waltz, that the spread of nuclear weapons makes the world safer. These countries joined together in the Nuclear Non-Proliferation Treaty (NPT) to prevent the spread of nuclear weapons, but they never agreed to maintain indefinitely a system of nuclear apartheid in which some states possess nuclear weapons and others are prohibited from doing so. The principal bargain of the NPT requires the five NPT nuclear weapons states (US, Russia, UK, France and China) to engage in good faith negotiations for nuclear disarmament, and the International Court of Justice interpreted this to mean complete nuclear disarmament in all its aspects. Tepperman seems to be arguing that seeking to prevent the proliferation of nuclear weapons is bad policy, and that nuclear weapons, because of their threat, make efforts at non-proliferation unnecessary and even unwise. If some additional states, including Iran, developed nuclear arsenals, he concludes that wouldn’t be so bad “given the way that bombs tend to mellow behavior.” Those who oppose Tepperman’s favorable disposition toward the bomb, he refers to as “nuclear pessimists.” These would be the people, and I would certainly be one of them, who see nuclear weapons as presenting an urgent danger to our security, our species and our future. Tepperman finds that when viewed from his “nuclear optimist” perspective, “nuclear weapons start to seem a lot less frightening.” “Nuclear peace,” he tells us, “rests on a scary bargain: you accept a small chance that something extremely bad will happen in exchange for a much bigger chance that something very bad – conventional war – won’t happen.” But the “extremely bad” thing he asks us to accept is the end of the human species. Yes, that would be serious. He also doesn’t make the case that in a world without nuclear weapons, the prospects of conventional war would increase dramatically. After all, it is only an unproven supposition that nuclear weapons have prevented wars, or would do so in the future. We have certainly come far too close to the precipice of catastrophic nuclear war. As an ultimate celebration of the faulty logic of deterrence, Tepperman calls for providing any nuclear weapons state with a “survivable second strike option.” Thus, he not only favors nuclear weapons, but finds the security of these weapons to trump human security. Presumably he would have President Obama providing new and secure nuclear weapons to North Korea, Pakistan and any other nuclear weapons states that come along so that they will feel secure enough not to use their weapons in a first-strike attack. Do we really want to bet the human future that Kim Jong-Il and his successors are more rational than Mr. Tepperman?

#### 2nd competitiveness – US is ceding nuclear competitiveness now

**Barton 11** [Charles Barton, Nuclear Green, “Have the Chinese Been Reading Energy from Thorium or Nuclear Green?” 1/31/11]

Last week the Chinese Academy of Science announced that it planned to finance the development of a Chinese Thorium Breeding Molten Salt Reactor (TMSR) or as it is called in the United States, the Liquid Fluoride Thorium Reactor (LFTR). The announcement came in a news report from Weihui.news365.com.cn. The announcement was relayed to Westerners who were interested in Thorium breeding molten salt reactors in a discussion thread comment posted by Chinese Scientist Hua Bai, last Friday. Kirk Sorensen, Brian Wang, and I all posted about Bai's announcement on Sunday, January 30.¶ In addition to these posts, the thread which Hua Bai started contains the revelation that the engineer who heads the Chinese Molten Salt Reactor Project is none other than Jiang Mianheng, a son of Retired Chinese President, Jiang Zemin. In addition to being President of People's China, Jiang was the chairmanship of the powerful Central Military Commission, suggesting the likelihood that Jiang Mianheng has military ties. He is the cofounder of Semiconductor Manufacturing International Corporation, and a former lead researcher in the Chinese Space Program, as well as Vice President of the Chinese Academy of Sciences. The presence of such a well connected Chinese science leader suggests that the Chinese TMSR project is regarded as important by the Chinese leadership. Thus the Chinese leadership, unlike the American Political andscientific leadership has grasped the potential of molten salt nuclear technology.¶ Yesterday, "horos11" commented on my blog, Nuclear Green,¶ I read this, and I didn't know whether to laugh or cry.¶ After all, this site and others have been sounding the clarion call to action on this, and I should be glad that someone finally heeded it and its getting traction in a place that really matters, but I have a sinking feeling that:¶ a. its going to take far less than their planned 20 years¶ b. they are going to succeed beyond their wildest expectations.¶ Which means that the next, giant sucking sound we may hear is the sound of the 5 trillion dollar energy market heading east, further depressing our economy, weakening the dollar (and the euro) and ultimately making the US economy dependent on rescue from the chinese in the future (when they are done rescuing themselves).¶ Yet, in the large scheme of things, this is a definite good, and may be our savior from anthropomorphic climate change.¶ so again, laugh? or cry. I guess its up to how you view things - I guess I'm tentatively laughing at the moment, but mostly from the overwhelming irony of all this.¶ Jason Ribeiro added,¶ I can't help but have a feeling of sour grapes about this. While I congratulate China for doing the obvious, America has its head buried so far in the sand it can't see straight. With all the internet clamor about LFTR that's been going on the internet in the past 3-4 years, it was the non-English speaking Chinese that finally got the message that this was a great idea worth investing in. Our leadership ought to be ashamed of themselves.¶ The Chinese News story on the Thorium Molten Salt Reactor reflects the clear Chinese thinking about the potential role of LFTRs in the future Chinese energy economy. I will paraphrase,¶ "the future of advanced nuclear fission energy - nuclear energy, thorium-based molten salt reactor system" project was officially launched. . . The scientific goal is to developed a new generation of nuclear energy systems [and to achieve commercial] use [in] 20 years or so. We intend to complete the technological research needed for this system and to assert intellectual property rights to this technology. Fossil fuel energy is being depleted, and solar and wind energy are not stable enough, while hydropower development has reached the limit of its potential.. . .¶ Nuclear power seems to offer us a very attractive future energy choice, high energy density, low carbon emissions, and the potential for sustainable development. . . . China has chosen {to make an energy] breakthrough in the direction of molten salt reactors. . . . this liquid fuel reactors has a simple structure and can run at atmospheric pressure, [it can use any fissionable material as fuel} and has other advantages. "This new stove" can be made very small, will operate with stabile nuclear fuel, and will run for several decades before replacement. After the thorium is completely used in the nuclear process the TMSR will produce nuclear waste will be only be one-thousandth of that produced by existing nuclear technologies.¶ As the world is still in the development of a new generation of nuclear reactors, the thorium-based independent research and development of molten salt reactors, will be possible to obtain all intellectual property rights. This will enable China to firmly grasp the lifeline of energy in their own hands.¶ Let the word "nuclear" no longer mean war.¶ In the past, people always talk about "core" colors. The Hiroshima atomic bomb, the Chernobyl nuclear power plant explosion, these are like a lingering nightmare that is marked in human history. But a new generation of nuclear power will take the color green, the mark of peace taking human beings into a new era.¶ Oh Wow! It sounds as if someone in China has been reading Nuclear Green or Energy from Thorium. And there is more!¶ In addition, the "new stove" operating at atmospheric pressure operation, rather than the traditional reactor operating at high pressure, will be simple and safe. "When the furnace temperature exceeds a predetermined value, in the bottom of the MSR core, a frozen plug of salt will automatically melt, releasing the liquid salt in the reactor core into an emergency storage tanks, and terminating the nuclear reaction," scientist Xu Hongjie told reporters, as the cooling agent is fluoride salts (the same salts that also carrying the nuclear fuel), after the liquid salt cools it turns solid, which prevents the nuclear fuel from leaking out of its containment, and thus will not pollute ground water causing an ecological disasters. The added safety opens up new possibilities for reactors, they can be built underground, completely isolating radioactive materials from the reactor, also the underground location will protect the reactor from an enemy's weapon attack. Reactors can be built in large cities, in the wilderness, or in remote villages.¶ Well Kirk Sorensen and I wanted our ideas to become national priorities. We just did not know in what country it would happen first. Unfortunately the leadership of the United States, continues to be determined to lead this nation into the wilderness of powerlessness, while the leadership of communist China is alert to the possibilities of a new energy age. Possibilities that can be realized by molten salt nuclear technology. Lets hope that someone in the White House or Congress wakes up. The Chinese understand the implications of their venture into Molten Salt nuclear technology. The American leadership does not.

#### That’s crucial to overall competitiveness

**Barton 10** (Charles Barton, Nuclear Green "Keeping up with China: The Economic Advantage of Molten Salt Nuclear Technology," 12/1/10)

American and European nuclear development can either proceed by following the cost lowering paths being pioneered in Asia, or begin to develop low cost innovative nuclear plans. Since low labor costs, represent the most significant Chinese and Indian cost advantage, it is unlikely that European and American reactor manufacturers will be able to compete with the Asians on labor costs. Labor costs for conventional reactors can be lowered by factory construction of reactor componant moduels, but the Chinese are clearly ahead of the West in that game. Yet the weakness of the Chinese system is the relatively large amount of field labor that the manufacture of large reactors requires.¶ The Chines system is to introduce labor saving devices where ever and when ever possible, but clearly shifting labor from the field to a factory still offers cost advantages. The more labor which can be performed in the factory, the more labor cost savings are possible. Other savings advantages are possible by simplifying reactor design, and lowering materials input. Building a reactor with less materials and fewer parts lowers nuclear costs directly and indirectly. Decreasing core size per unit of power output also can contribute a cost advantage. Direct saving relate to the cost of parts and matetials, but fewer parts and less material also means less labor is required to put things together, since there is less to put together. In addition a small reactor core structure, would, all other things being equal, require a smaller housing. Larger cores mean more structural housing expenses.¶ While the Pebel Bed Modular Reactor has a relatively simple core design, the actual core is quite large, because of the cooling inefficiency of helium. Thus, the simplisity of the PBMR core is ballanced by its size, its total materials input, and the size of its housing. The large core and housing requirements of the PBMR also adds to its labor costs, especially its field labor cost. Thus while the simplisity of the PBMR core design would seem to suggest a low cost, this expectation is unlikely to br born out in practice.¶ Transportation limits ability to shift production from the field to the factory. An analysis preformed by the University of Tennessee's, and the Massachusettes Institute of Technology's Departments of Nuclear Engineering looked at the 335 MW Westinghouse IRIS reactor. The analysis found,¶ A rough estimate of the weight for a 1000 MWt modular reactor and its secondary system, similar to the Westinghouse IRIS plant, is taken as the summation of all of the major components in the analysis. Many of the smaller subcomponents have been neglected. The containment structure contributes ~2.81E6 kg (3100 tons). The primary reactor vessel and the turbo-generator contribute ~1.45E6 kg (1600 tons) each. The heat exchange equipment and piping contribute ~6.78E5 kg (747 tons). Therefore, the total weight of the major plant components is~ 6.39E6 kg (7047 tons).¶ The weight and width of the IRIS would place constraints of barge transportation of the IRIS on the Tennessee and Ohio Rivers. The report stated,¶ The Westinghouse barge mounted IRIS reactor modules were limited in size based on input from the University of Tennessee. The barge dimension limitations were established to be 30 meters (98’-5”) wide, 100 meters (328’-1”) long, with a 2.74 meter (9’) draft. These dimensions establish the barge maximum displacement at 8,220 metric tons. In addition, the barge(s) are limited to ~20 meters (65’-7”) in height above the water surface, so that they fit under crossing bridges and can be floated up the Mississippi, Ohio, and Tennessee Rivers as far as the city of Chattanooga, Tennessee. Further movement above Chattanooga is currently limited by the locks at the Chickamauga Reservoir dam.¶ The above barge displacement limitation will impose severe limits on how much structural support and shield concrete can be placed in the barge modules at the shipyard. For example, the estimated weight of concrete in the IRIS containment and the surrounding cylindrical shield structure alone greatly exceeds the total allowable barge displacement. This however does not mean that barge- mounted pressurized water reactors (PWRs) are not feasible. It does mean that barge-mounted PWRs need to employ steel structures that are then used as the forms for the addition of needed concrete after the barge has been floated into its final location and founded.¶ Thus for the IRIS, barge transportation presented problems, and rail transportation was unthinkable. The core of the 125 MW B&W mPower reactor is rail transportable, but final onsite mPower assembly/construction became a significant undertaking, with a consequent increase in overall cost. The core unit does include a pressure vessel and heat exchange mounted above the actual reactor, but many other mPower component modules must be transported seperately and assembled on site.¶ The IIRIS project demonstrates the unlikelihood of whole small reactors being transported to the field ready for energy production without some field construction. This might be possible, however, for mini reactors that are two small to be viewed as a plausible substitute for the fossil fuel powered electrical plants currently supplying electricity for the grid. This then leaves us with¶ with a gap between the cost savings potential of factory manufacture, and the costly process of onsite assembly. B&W the manufacturers of the small 125 MW MPower reactor still has not clarified what percentage of the manufacturing process would be factory based. It is clear, however that B&W knows where it is comming from and what its problems are, as Rod Adams tells us:¶ I spoke in more detail to Chris Mowry and listened as he explained how his company's research on the history of the nuclear enterprise in the US had revealed that 30% of the material and labor cost of the existing units came from the supplied components while 70% was related to the site construction effort. He described how the preponderance of site work had influenced the cost uncertainty that has helped to discourage new nuclear plant construction for so many years.¶ What Mowey did not tell Adams is what percentage of the materials and labor costs will be shifted to the factory as mPower reactors are produced. There have been hints that a significant percentage of the mPower manufacturing process, perhaps as much as 50% will still take place on site. B&W still is working on the design of their manufacturing process, and thus do not yet know all of the details. Clearly then more work needs to be done on controlling onsite costs.¶ Finally, a shift to advanced technology will can lower manufacturing costs. Compared to Light Water reactors, Liquid metal cooled reactors use less material and perhaps less labor, but pool type liqiod metal reactors are not compact. Compared to Liquid Metal cooled reactors, Molten Salt cooled reactor will have more compact cores. Shifting to closed cycle gas turbines will decrease construction costs. The added safety of Molten Salt cooled reactors will increase reactor simplification, and thus further lower labor and materials related construction costs.¶ The recycling of old power plant locations will also offer some savings. Decreasing manufacturing time will lower interest costs. ¶ All in all there are a lot of reasons to expect lower nuclear manufacturing costs with Generation IV nuclear power plants, and at present no one has come up with a good reason for expecting Molten Salt cooled reactors to cost more than traditional NPPs. The argument, however, is not iron clad. Even if no one has pointed out plasuible errors in it, we need to introduce the caviot that expectations frenquently are not meet. It is possible, for example that the NRC might impose unreasonable expectations on molten salt cooled reactors. Demanding, for example, that they include the same safety features as LWRs, even though they do not have many LWR safety problems. But the potential savings on the cost of energy by adopting molten salt nuclear technology is substantial, and should not be ignored. ¶ To return to the problem posed by Brian Wang, the problem of lower Asian nuclear construction costs. If Europe and the United States cannot meet the Asican energy cost challenge, their economies will encounter a significant decline. Because of Labor cost advantages, it is unlikely that Generation III nuclear plants will ever cost less to build in the United States or Europe than in Asia. in order to keep the American and European economies competitive, the United States and Europe must adopt a low cost, factory manufactured nuclear technology. Molten Salt nuclear technology represents the lowest cost approach, and is highly consistent with factory manufacture and other cost lowering approaches. Couple to that the outstanding safety of molten salt nuclear technology, the potential for dramatically lowering the creation of nuclear waste, and the obsticles to nuclear proliferation posed by molten salt nuclear rechnology, and we see a real potential for keeping the American and European economies competitive, at least as far as energy costs are concerned.

#### Competitiveness prevents great power war – and economic perception is key

**Baru 9** - Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore (Sanjaya, “Year of the power shift?,”

http://www.india-seminar.com/2009/593/593\_sanjaya\_baru.htm

**T**here is no doubt that economics alone will not determine the balance of global power, but there is no doubt either that economics has come to matter for more.¶ The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s *Arthashastra* says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5¶ In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others.¶ ‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s *military-power* balance have followed alterations in the *productive* balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7¶ **I**n Kennedy’s view the geopolitical consequences of an economic crisis or even decline would be transmitted through a nation’s inability to find adequate financial resources to simultaneously sustain economic growth and military power – the classic ‘guns vs butter’ dilemma.¶ Apart from such fiscal disempowerment of the state, economic under-performance would also reduce a nation’s attraction as a market, a source of capital and technology, and as a ‘knowledge power’. As power shifted from Europe to America, so did the knowledge base of the global economy. As China’s power rises, so does its profile as a ‘knowledge economy’.¶ Impressed by such arguments the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China’s political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.8¶ While China’s impressive economic performance and the consequent rise in China’s global profile has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington DC. We must expect a revival of interest in Kennedy’s arguments in the current context.¶ **A** historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the ‘square of power’ as the tax bureaucracy, the parliament, the national debt and the central bank. These four institutions of ‘fiscal empowerment’ of the state enable nations to project power by mobilizing and deploying financial resources to that end.9 ¶ Ferguson shows how vital sound economic management is to strategic policy and national power. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet empires and that of the United States of America. In an early comment on the present financial crisis, Ferguson wrote:¶ ‘We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US… It remains to be seen how quickly today’s financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America’s quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors*. …*as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient Oriental empires (not only the Ottoman but also the Persian and Chinese) to Western Europe. Today the shift is from the US – and other western financial centres – to the autocracies of the Middle East and East Asia.’10 ¶ An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union the financial crunch caused by the Afghan war came on top of years of economic under-performance and the loss of political legitimacy of the Soviet state. In a democratic society like the United States the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet state was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it.¶ Hence, one must not become an economic determinist and historic parallels need not always be relevant. Politics can intervene and offer solutions. Political economy and politics, in the form of Keynesian economics and the ‘New Deal’, did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today’s America remains to be seen.

#### 3rd economy – nuclear power is an effective stimulus

**Somsel 9** [January 23, 2009, “Productive stimulus: Fast-track nuclear power”, By Joseph Somsel, MBA from California Polytechnic University, nuclear engineer, broad work background in the nuclear power industry and in the overall electric utility business, currently involved in entrepreneurial development of niche electrical generating sources in California and Colorado]

So unemployment is rising in the US and the pace of economic growth has turned negative. Congress and Mr. Obama's first thoughts turn to Keynesian economics which prescribe an increase in governmental spending to "prime the pump." While the wisdom and efficacy of this course is still subject to debate, even after 80 years, it looks like there will be no stopping a huge federal stimulus package from Congress. What is open to debate is what form and direction should the stimulus take. Some argue for direct payments to consumers while other argue for governmental "investment" in useful infrastructure.¶ In US history, there are a couple of bright spots where government infrastructure investments have been unqualified successes. The classic case is New York State's Eire Canal, completed in 1825. Eisenhower's push for the Interstate Highway System during the 1950s is another textbook example. Both of these are transportation improvements that made movement of people and goods within the country both quicker and cheaper. They greatly increased economic productivity.¶ Another example of successful economic investment by government was in the initial development of commercial nuclear power. Even during World War II's Manhattan Project, scientists and engineers were eager to moonlight on the anticipated peaceful use of atomic energy and with peace, the newly formed Atomic Energy Commission got busy with a series of innovative reactor designs to make commercial electricity. The first nuclear "juice" was produced by 1951, lighting a string of four light bulbs. The eventual sorting-out of the unworkable and the impractical was largely complete by the early 1960s, primarily funded by the federal government. Eventual amendments to the Atomic Energy Act allowed privately held industrial companies and electric utilities to begin implementation of real nuclear power plants able to pay for themselves through the production and sale of electricity.¶ The first Arab Oil Crisis of 1972 was a tremendous stimulus to nuclear power. In 1970, 35% of US electricity was fueled by oil, increasingly imported and rapidly increasing in price and decreasing in security of supply. The first wave of commercial nuclear plants, along with construction of additional coal-burning plants, subsequently reduced our use of oil in electrical generation to about 2% today. These operating plants are doing well financially; Warren Buffett recently tried to buy several but lost out in bidding to a French company.¶ The US is poised for a second wave of new nuke construction. The principal regulator, the Nuclear Regulatory Commission, has been requested to schedule reviews for over 30 new reactors. The first new application showed up September, 2007, for two units in Texas with 24 others already in the hopper. Orders for long-lead hardware have been placed but actual site construction must await the myriad of government permits required.¶ Yet, it remains uncertain how many of these proposed plants will be built. The technical and commercial risks are well in hand since the basic technology is merely an evolution on the tried-and-true. Most of the proposed reactors are to be built on sites that already have operating reactors on them so environmental surprises should be rare. What concerns investors are the legal and political risks. The most notorious past example was when county officials in a single Long Island county effectively wiped out $6 billion of private investment by refusing to participate in an evacuation drill for the Shoreham nuke in the 1980s. The company went bankrupt and sold the whole utility to the state of New York for $1.¶ In 2005, Congress proposed to mitigate those external risks that nuclear investors face by offering an insurance pool against frivolous lawsuits, changing rules, and local political intransigence. Writing these regulations for the pool grants has seemed to take forever and in any case is too little and almost too late. Designed for a few "bleeding edge" pioneers, the tentative few have become a mad rush, swamping the original allocation of insurance funds.¶ But our political leaders are now casting about for a quick economic stimulus for the economy. They want a way to create jobs NOW, hopefully doing something productive. One risk is that, like the last stimulus package, Congress will give in to the temptation to play Santa Claus in February, mailing out checks to everyone. Exactly how that's supposed to help the economy remains unclear.¶ Instead, I propose that Congress bankroll immediate construction of a dozen new nuclear reactors at existing nuke sites. This meets the common concern that infrastructure projects be "shovel-ready." Starting with existing nuclear power plant sites minimizes risk of undiscovered environmental issues. Local political acceptance is usually well resolved after years of "good neighbor" operation, not to mention the millions of dollars annually that flows into the local economy and government treasuries.¶ While fabrication of long-lead components may eventually constrain the startup schedule, we could start the massive work of digging the foundations and laying the concrete and reinforcing steel that is so much of nuclear construction. With a bit of tweaking of current regulations on "limited work authorizations", those plants that have turned in applications to the NRC of acceptable quality could start "turning dirt" within a couple months. Congress could mandate the early construction rule changes and guarantee the job-creating funds committed. Actual startup of the reactors would still require detailed inspections and tests by the NRC, but that is, at best, a few years off. Since current requirements effectively prohibit construction until after the application is approved, this proposal would shave off years of delay in the operation of an expanded nuclear fleet. Plus, it would put price pressure on any proposed new coal plants and surely reduce coal's future market share, if that be the new Administration's policy goal.¶ So what's the worst that could happen should a project run into difficulties down the road? The government would have paid some guys to dig a hole. Then they would have to pay some more guys to fill it in. This plan just defaults to regular government work.

#### Double-dip recession now – immediately stimulating the economy key to solve

Jeff Cox 10-25-2012; “Companies reluctant to spend money, fearing double-dip recession” <http://www.alaskadispatch.com/article/companies-reluctant-spend-money-fearing-double-dip-recession>

Corporations are stowing away cash at record rates, reluctant to invest in their businesses or hire new workers as uncertainty clouds the future. Amid a lackluster earning season that has featured many companies missing sales expectations, cash balances have swelled 14 percent and are on track toward $1.5 trillion for the Standard & Poor's 500, according to JPMorgan. Both levels would be historic highs. The buildup contrasts with an earnings picture in which 61 percent of the 127 companies that reported through last week have missed revenue expectations though more than half have beaten estimates. With [unemployment](http://www.cnbc.com/id/44451664/) mired at 7.8 percent, economic growth at 1.3 percent and the stock market getting no lift from earnings, the larger question is when companies will start putting that money to work. (Read More: [What the Jobs Report Really Says About the Economy](http://www.cnbc.com/id/49302044/)) "Companies aren't making the capital investments because they don't see the growth to make the investment," said Jim Paulsen, chief market strategist at Wells Capital Management in Minneapolis. "They're not making long-term investments without a feel for sales growth. That's what's got to come." Since the 2008 financial crisis, investors had been content to **watch companies use government stimulus** to build up liquidity in case the economy should double-dip back into recession. But with the [S&P 500](http://data.cnbc.com/quotes/.SPX) breaching important support levels and an economy hungry for a growth engine, it's only a matter of time before that patience wears thin. "It's going to take on more significance for investors. They're going to get more and more upset about sitting on hoards of cash. You may be hearing more activist investor calls," Paulsen said. "People are getting less concerned about financial risks and more **concerned about growth**," he added. "If you're not going to grow, at least pay it back in returns. It's going to go from a badge of honor (for accumulating cash) to representation of poor management."

#### Decline causes global war

Royal 10 – Jedediah Royal, Director of Cooperative Threat Reduction at the U.S. Department of Defense, 2010, “Economic Integration, Economic Signaling and the Problem of Economic Crises,” in Economics of War and Peace: Economic, Legal and Political Perspectives, ed. Goldsmith and Brauer, p. 213-214

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defence behaviour of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson’s (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crises could usher in a redistribution of relative power (see also Gilpin, 10981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Fearon, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner, 1999). Seperately, Polllins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium, and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland’s (1996,2000) theory of trade expectations suggests that ‘future expectation of trade’ is a significant variable in understanding economic conditions and security behavior of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectation of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases , as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states. Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession tends to amplify the extent to which international and external conflicts self-reinforce each other. (Blomberg & Hess, 2002, p.89). Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. ‘Diversionary theory’ suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to create a ‘rally round the flag’ effect. Wang (1996), DeRouen (1995), and Blomberg, Hess and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997) Miller (1999) and Kisanganie and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak presidential popularity, are statistically linked to an increase in the use of force.

### 2

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise

**Prothero 12** [Donald R. Prothero, Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, "How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO]

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### Causes extinction

Sawin 12 [Janet Sawin, Senior Director of the Energy and Climate Change Program at the WorldWatch Institute, Aug 2012, “Climate Change Poses Greater Security Threat than Terrorism]

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources.

#### The IFR is the only way to reduce coal emissions sufficiently to avert the worst climate disasters

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "Why We Should Build an Integral Fast Reactor Now," 11/25/9) http://skirsch.wordpress.com/2009/11/25/ifr/

To prevent a climate disaster, we must eliminate virtually all coal plant emissions worldwide in 25 years. The best way and, for all practical purposes, the only way to get all countries off of coal is not with coercion; it is to make them want to replace their coal burners by giving them a plug-compatible technology that is less expensive. The IFR can do this. It is plug-compatible with the burners in a coal plant (see Nuclear Power: Going Fast). No other technology can upgrade a coal plant so it is greenhouse gas free while reducing operating costs at the same time. In fact, no other technology can achieve either of these goals. The IFR can achieve both.¶ The bottom line is that without the IFR (or a yet-to-be-invented technology with similar ability to replace the coal burner with a cheaper alternative), it is unlikely that we’ll be able to keep CO2 under 450 ppm.¶ Today, the IFR is the only technology with the potential to displace the coal burner. That is why restarting the IFR is so critical and why Jim Hansen has listed it as one of the top five things we must do to avert a climate disaster.[4]¶ Without eliminating virtually all coal emissions by 2030, the sum total of all of our other climate mitigation efforts will be inconsequential. Hansen often refers to the near complete phase-out of carbon emissions from coal plants worldwide by 2030 as the sine qua non for climate stabilization (see for example, the top of page 6 in his August 4, 2008 trip report).¶ To stay under 450ppm, we would have to install about 13,000 GWe of new carbon-free power over the next 25 years. That number was calculated by Nathan Lewis of Caltech for the Atlantic, but others such as Saul Griffith have independently derived a very similar number and White House Science Advisor John Holdren used 5,600 GWe to 7,200 GWe in his presentation to the Energy Bar Association Annual Meeting on April 23, 2009. That means that if we want to save the planet, we must install more than 1 GWe per day of clean power every single day for the next 25 years. That is a very, very tough goal. It is equivalent to building one large nuclear reactor per day, or 1,500 huge wind turbines per day, or 80,000 37 foot diameter solar dishes covering 100 square miles every day, or some linear combination of these or other carbon free power generation technologies. Note that the required rate is actually higher than this because Hansen and Rajendra Pachauri, the chair of the IPCC, now both agree that 350ppm is a more realistic “not to exceed” number (and we’ve already exceeded it).¶ Today, we are nowhere close to that installation rate with renewables alone. For example, in 2008, the average power delivered by solar worldwide was only 2 GWe (which is to be distinguished from the peak solar capacity of 13.4GWe). That is why every renewable expert at the 2009 Aspen Institute Environment Forum agreed that nuclear must be part of the solution. Al Gore also acknowledges that nuclear must play an important role.¶ Nuclear has always been the world’s largest source of carbon free power. In the US, for example, even though we haven’t built a new nuclear plant in the US for 30 years, nuclear still supplies 70% of our clean power!¶ Nuclear can be installed very rapidly; much more rapidly than renewables. For example, about two thirds of the currently operating 440 reactors around the world came online during a 10 year period between 1980 and 1990. So our best chance of meeting the required installation of new power goal and saving the planet is with an aggressive nuclear program.¶ Unlike renewables, nuclear generates base load power, reliably, regardless of weather. Nuclear also uses very little land area. It does not require the installation of new power lines since it can be installed where the power is needed. However, even with a very aggressive plan involving nuclear, it will still be extremely difficult to install clean power fast enough.¶ Unfortunately, even in the US, we have no plan to install the clean power we need fast enough to save the planet. Even if every country were to agree tomorrow to completely eliminate their coal plant emissions by 2030, how do we think they are actually going to achieve that? There is no White House plan that explains this. There is no DOE plan. There is no plan or strategy. The deadlines will come and go and most countries will profusely apologize for not meeting their goals, just like we have with most of the signers of the Kyoto Protocol today. Apologies are nice, but they will not restore the environment.¶ We need a strategy that is believable, practical, and affordable for countries to adopt. The IFR offers our best hope of being a centerpiece in such a strategy because it the only technology we know of that can provide an economically compelling reason to change.¶ At a speech at MIT on October 23, 2009, President Obama said “And that’s why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. … The nation that wins this competition will be the nation that leads the global economy. I am convinced of that. And I want America to be that nation, it’s that simple.”¶ Nuclear is our best clean power technology and the IFR is our best nuclear technology. The Gen IV International Forum (GIF) did a study in 2001-2002 of 19 different reactor designs on 15 different criteria and 24 metrics. The IFR ranked #1 overall. Over 242 experts from around the world participated in the study. It was the most comprehensive evaluation of competitive nuclear designs ever done. Top DOE nuclear management ignored the study because it didn’t endorse the design the Bush administration wanted.¶ The IFR has been sitting on the shelf for 15 years and the DOE currently has no plans to change that.¶ How does the US expect to be a leader in clean energy by ignoring our best nuclear technology? Nobody I’ve talked to has been able to answer that question.¶ We have the technology (it was running for 30 years before we were ordered to tear it down). And we have the money: The Recovery Act has $80 billion dollars. Why aren’t we building a demo plant?¶ IFRs are better than conventional nuclear in every dimension. Here are a few:¶ Efficiency: IFRs are over 100 times more efficient than conventional nuclear. It extracts nearly 100% of the energy from nuclear material. Today’s nuclear reactors extract less than 1%. So you need only 1 ton of actinides each year to feed an IFR (we can use existing nuclear waste for this), whereas you need 100 tons of freshly mined uranium each year to extract enough material to feed a conventional nuclear plant.¶ Unlimited power forever: IFRs can use virtually any actinide for fuel. Fast reactors with reprocessing are so efficient that even if we restrict ourselves to just our existing uranium resources, we can power the entire planet forever (the Sun will consume the Earth before we run out of material to fuel fast reactors). If we limited ourselves to using just our DU “waste” currently in storage, then using the IFR we can power the US for over 1,500 years without doing any new mining of uranium.[5]¶ Exploits our largest energy resource: In the US, there is 10 times as much energy in the depleted uranium (DU) that is just sitting there as there is coal in the ground. This DU waste is our largest natural energy resource…but only if we have fast reactors. Otherwise, it is just waste. With fast reactors, virtually all our nuclear waste (from nuclear power plants, leftover from enrichment, and from decommissioned nuclear weapons)[6] becomes an energy asset worth about $30 trillion dollars…that’s not a typo…$30 trillion, not billion.[7] An 11 year old child was able to determine this from publicly available information in 2004.

#### Alternative methods can’t solve warming

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "How Does Obama Expect to Solve the Climate Crisis Without a Plan?" 7/16/9) <http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html-http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html>

The ship is sinking slowly and we are quickly running out of time to develop and implement any such plan if we are to have any hope of saving the planet. What we need is a plan we can all believe in. A plan where our country's smartest people all nod their heads in agreement and say, "Yes, this is a solid, viable plan for keeping CO2 levels from touching 425ppm and averting a global climate catastrophe."¶ ¶ At his Senate testimony a few days ago, noted climate scientist James Hansen made it crystal clear once again that the only way to avert an irreversible climate meltdown and save the planet is to phase out virtually all coal plants worldwide over a 20 year period from 2010 to 2030. Indeed, if we don't virtually eliminate the use of coal worldwide, everything else we do will be as effective as re-arranging deck chairs on the Titanic.¶ ¶ Plans that won't work¶ ¶ Unfortunately, nobody has proposed a realistic and practical plan to eliminate coal use worldwide or anywhere close to that. There is no White House URL with such a plan. No environmental group has a workable plan either.¶ ¶ Hoping that everyone will abandon their coal plants and replace them with a renewable power mix isn't a viable strategy -- we've proven that in the U.S. Heck, even if the Waxman-Markey bill passes Congress (a big "if"), it is so weak that it won't do much at all to eliminate coal plants. So even though we have Democrats controlling all three branches of government, it is almost impossible to get even a weak climate bill passed.¶ ¶ If we can't pass strong climate legislation in the U.S. with all the stars aligned, how can we expect anyone else to do it? So expecting all countries to pass a 100% renewable portfolio standard (which is far far beyond that contemplated in the current energy bill) just isn't possible. Secondly, even if you could mandate it politically in every country, from a practical standpoint, you'd never be able to implement it in time. And there are lots of experts in this country, including Secretary Chu, who say it's impossible without nuclear (a point which I am strongly in agreement with).¶ ¶ Hoping that everyone will spontaneously adopt carbon capture and sequestration (CCS) is also a non-starter solution. First of all, CCS doesn't exist at commercial scale. Secondly, even if we could make it work at scale, and even it could be magically retrofitted on every coal plant (which we don't know how to do), it would require all countries to agree to add about 30% in extra cost for no perceivable benefit. At the recent G8 conference, India and China have made it clear yet again that they aren't going to agree to emission goals.¶ ¶ Saying that we'll invent some magical new technology that will rescue us at the last minute is a bad solution. That's at best a poor contingency plan.¶ ¶ The point is this: It should be apparent to us that we aren't going to be able to solve the climate crisis by either "force" (economic coercion or legislation) or by international agreement. And relying on technologies like CCS that may never work is a really bad idea.¶ ¶ The only remaining way to solve the crisis is to make it economically irresistible for countries to "do the right thing." The best way to do that is to give the world a way to generate electric power that is economically more attractive than coal with the same benefits as coal (compact power plants, 24x7 generation, can be sited almost anywhere, etc). Even better is if the new technology can simply replace the existing burner in a coal plant. That way, they'll want to switch. No coercion is required.

### 3

#### Argonne National Lab has a severe shortfall of quality scientists now – the best and brightest aren’t replacing retirees

Grossenbacher 08[CQ Congressional Testimony, April 23, 2008, John, Laboratory Director Idaho National Laboratory, “NUCLEAR POWER,” SECTION: CAPITOL HILL HEARING TESTIMONY, Statement of John J. Grossenbacher Laboratory Director Idaho National Laboratory, Committee on House Science and Technology, Lexis]

While all of the programs I've highlighted for you individually and collectively do much to advance the state of the art in nuclear science and technology, and enable the continued global expansion of nuclear power, there is a great area of challenge confronting nuclear energy's future. As with most other technologically intensive U.S. industries - it has to do with human capital and sustaining critical science and technology infrastructure. My laboratory, its fellow labs and the commercial nuclear power sector all face a troubling reality - a significant portion of our work force is nearing retirement age and the pipeline of qualified potential replacements is not sufficiently full. Since I'm well aware of this committee's interests in science education, I'd like to update you on what the Department and its labs are doing to inspire our next generation of nuclear scientists, engineers and technicians. Fundamentally, the Office of Nuclear Energy has made the decision to invite direct university partnership in the shared execution of all its R&D programs and will set aside a significant amount of its funds for that purpose. Already, nuclear science and engineering programs at U.S. universities are involved in the Office of Nuclear Energy's R&D, but this move will enable and encourage even greater participation in DOE's nuclear R&D programs. In addition, all NE-supported labs annually bring hundreds of our nation's best and brightest undergraduate and graduate students on as interns or through other mechanisms to conduct real research. For example, at INL we offer internships, fellowships, joint faculty appointments and summer workshops that focus on specific research topics or issues that pertain to maintaining a qualified workforce. This year, we are offering a fuels and materials workshop for researchers and a 10-week training course for engineers interested in the field of reactor operations. Last year, DOE designated INL's Advanced Test Reactor as a national scientific user facility, enabling us to open the facility to greater use by universities and industry and to supporting more educational opportunities. ATR is a unique test reactor that offers the ability to test fuels and materials in nine different prototypic environments operated simultaneously. With this initiative, we join other national labs such as Argonne National Laboratory and Oak Ridge National Laboratory in offering nuclear science and engineering assets to universities, industry and the broader nuclear energy research community. Finally, national laboratories face their own set of challenges in sustaining nuclear science and technology infrastructure - the test reactors, hot cells, accelerators, laboratories and other research facilities that were developed largely in support of prior missions. To obtain a more complete understanding of the status of these assets, the Office of Nuclear Energy commissioned a review by Battelle to examine the nuclear science and technology infrastructure at the national laboratories and report back later this year on findings and recommendations on a strategy for future resource allocation that will enable a balanced, yet sufficient approach to future investment in infrastructure.

#### The plan attracts the best and brightest back to Argonne – successful demonstration of IFR spurs collaborative nuclear interdisciplinary research

Blees 8 [Tom Blees 2008 “Prescription for the Planet: The painless remedy for our energy and environmental crises” Pg. 367]

21. Restart nuclear power development research at national labs like Argonne, concentrating on small reactor designs like the nuclear battery ideas discussed earlier. Given the cost and difficulty of extending power grids over millions of square miles of developing countries, the advantages of distributed generation in transforming the energy environment of such countries can hardly be exaggerated. It is a great pity that many of the physicists and engineers who were scattered when the Argonne IFR project was peremptorily terminated chose to retire. Rebuilding that brain trust should be, well, a no-brainer. If one but looks at the incredible challenges those talented people were able to meet, it seems perfectly reasonable to suppose that a focus on small sealed reactor development could likewise result in similar success. Some of those working on the AHTR and other seemingly unneeded projects could well transition to R&D that fits into the new paradigm. Japanese companies are already eager to build nuclear batteries, and there should be every effort to work in concert with them and other researchers as we develop these new technologies. The options this sort of collaborative research would open up for the many varied types of energy needs around the world would be incalculable.

#### Successful demonstration projects and collaborative interdisciplinary research is necessary to attract the best and brightest scientists to Argonne and fully complete products

**ANL 8** [Argonne National Laboratory INSTITUTIONAL PLAN FY2004-FY2008, operated by The University of Chicago for the¶ United States Department of Energy’s Office of Science]

Our planning is based on five key¶ assumptions:¶ • DOE’s national laboratories must act¶ increasingly as a synergistic system, with the¶ laboratories managing their collective¶ competencies, increasing their overall costeffectiveness, and partnering on major¶ initiatives among themselves and with the¶ private and academic sectors.¶ • Sponsors, regulators, and the public will¶ continue to require that we demonstrate¶ responsible corporate citizenship. This¶ imperative includes being a good and trustworthy neighbor, conducting operations costeffectively and responsibly, and meeting or¶ exceeding regulatory requirements.¶ • Argonne must compete on its merits for¶ federal funding, for the “best and brightest”¶ employees, and for the modern infrastructure¶ needed for future success. Important factors in¶ this competition will be scientific and¶ technological excellence, cost-effectiveness,¶ mission contributions, record of performance,¶ and a working environment that enables high¶ performance from a diverse and talented¶ workforce.¶ • Robust links with universities, industry,¶ federal laboratories, and the general scientific¶ and technical community (within the¶ United States and abroad) are essential if we¶ are to maintain our leadership and fully¶ exploit advances made throughout the world.¶ • Computing, computational science, and¶ communications and information technology¶ will advance rapidly, will become seamlessly¶ intertwined with experimental science, and¶ will thereby revolutionize many fields of¶ research and applications that are central to¶ the missions of DOE and Argonne.

#### Attracting leading scientists to Argonne key to successful development of the Advanced Photon Source

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Scientific Community¶ An enhanced catalyst research beamline with capabilities for in situ XAFS, powder¶ diffraction, and kinetics measurements would benefit the entire catalysis community,¶ i.e., government research laboratories, academia, and industry. The beamline and its¶ staff would also serve as a focal point for expanding catalyst research to other APS¶ beamlines using advanced techniques not routinely applied to catalyst systems, e.g.,¶ SAXS, XES, RIXS, and HERF spectroscopy. Development of these latter methods¶ would position the APS as a leader in this area and attract leading scientists from all¶ over the world. It is expected that new users would initially characterize their materials and identify appropriate systems for specialized techniques.¶ Fig. 4. Cell for in situ x-ray absorption studies of fuel cell¶ catalysts. Standard Fuel Cell Technologies cell hardware¶ was machined to allow x-ray fluorescence studies of cathode electrocatalysts in an operating membrane-electrode¶ assembly (fuel cell). (Argonne National Laboratory photograph)Throughout the U.S. and the world, there are countless research groups working to¶ develop the enabling material in fuel cell catalysis: an oxygen reduction electrocatalyst that is less expensive and more durable than platinum [36-38]. A few of these¶ groups utilize synchrotron-based x-ray techniques to characterize their electrocatalysts; however, these studies are almost exclusively in environments mimicking the¶ reactive environment or are ex situ. A notable exception is the catalyst development¶ effort being led by Los Alamos National Laboratory, which encompasses many approaches and involves many university and national laboratories. As part of this project, Argonne researchers have developed the capability to characterize catalysts¶ containing low-atomic-number elements in an operating fuel cell using XAFS at the¶ APS. Utilizing this cell (Fig. 4), Argonne scientists have determined the active site in¶ a cobalt-containing catalyst. This capability would be extremely useful to other catalyst development teams around the country and the world, and it is envisioned that a¶ dedicated APS electrocatalysis beamline could be designed and made available to¶ these teams. The neutron source at the National Institute of Standards and Technology (NIST) has a beamline dedicated to studies of water transport in fuel cells, which¶ has provided invaluable information for fuel cell materials design. The APS beamline¶ would be the catalyst counterpart to the NIST beamline.¶ A molecular-level understanding of the interactions and correlations that occur in solution and between solution phases is essential to building a predictive capability of a¶ metal ion’s solubility, reactivity, kinetics, and energetics. Until the recent availability¶ of tunable, high-energy x-rays this understanding has been significantly limited by¶ the absence of structural probes. The APS, with its high flux of high-energy x-rays, is¶ the ideal synchrotron source to provide this new information, which is critical to the¶ advancement of solution chemistry. The utility of high-energy x-rays is currently¶ being demonstrated as part of an APS Partner User Proposal (PUP-52), and has received high visibility, including an Inorganic Chemistry feature cover [34]. This effort¶ is interesting a cadre of solution chemists that, to date, have not been part of the user¶ base at synchrotron facilities. The extension of high-energy capabilities from simple¶ PDF experiments to more complex liquid-liquid interfaces is expected to significantly¶ broaden this new interest group into areas including soft-matter studies.

#### APS solves chemical industry

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Within solutions themselves, self-assembly and ordering of ions or molecules at interfaces is important in many biotic and abiotic processes. Phase-transfer catalysis,¶ pharmaceutical drug delivery, many electrochemical processes, nanoparticle synthesis, and numerous chemical reactions take place at the interface between two immiscible liquids. Important environmental processes that rely upon interactions at interfaces include tertiary oil recovery, solvent extraction of radionuclides from nuclear¶ waste, and permeation liquid membranes used for the cleanup of ions in the environment. For example, biological membranes at aqueous-aqueous boundaries are fundamental to cell chemistry and processes. In the area of separations science—a¶ cornerstone of the chemical industry—solvent extraction and other metals separations technologies rely heavily on the transfer of metal ions across an interface.¶ Significance of the APS¶ Understanding solution and materials chemistry requires knowledge of structure at¶ the atomic level. Most of the standard structural characterization tools provide highquality information on bulk, periodic, or crystalline materials. Equally high-quality¶ characterization is needed for amorphous materials, solutions, and complex nanostructures. Synchrotron-based techniques can now be used to characterize samples¶ irrespective of their state of crystallinity via different scattering and spectroscopic¶ methods. X-rays are providing structural details at length scales that encompass¶ local structure from about an ion to the long-range ordering present in well-formed¶ crystalline materials, and have found applications in solutions, glasses, liquids, poorquality crystals, powders (which can be multiphase), assemblies of micro-crystals, adsorbed surface layers, etc. Moreover, the evolution of structure under reaction¶ conditions is also an important feature of a catalytic system that needs to be investigated and understood. Techniques most often used for analysis of catalytic materials¶ include x-ray diffraction and scattering, pair distribution function (PDF), small-angle¶ scattering (SAXS) and x-ray absorption spectroscopy (EXAFS and x-ray absorption¶ near-edge fine structure, XANES).¶ Current APS techniques and potential upgrades in capabilities¶ Synchrotron x-ray powder diffraction (SXRPD) is a core competency for structural¶ analysis of catalytic nanoparticles. The major application of SXRPD is structural¶ analysis of new catalytic materials using Rietveld refinement (e.g., zeolites and mixed oxides). In recent years, there has also been much interest in in situ catalyst¶ research. Having a beamline with capabilities for in situ measurements would be¶ highly advantageous to the catalysis community, as many metallic nanoparticles are¶ highly oxidized in ambient air.

#### A strong chemical industry prevents extinction

**Baum ’99** (Rudy M., C&EN Washington, Chemical and Engineering News, Millennium Special Report, 12-6, http://pubs.acs.org/hotartcl/cenear/991206/7749spintro2.html)

Here is the fundamental challenge we face: The world's growing and aging population must be fed and clothed and housed and transported in ways that do not perpetuate the environmental devastation wrought by the first waves of industrialization of the 19th and 20th centuries. As we increase our output of goods and services, as we increase our consumption of energy, as we meet the imperative of raising the standard of living for the poorest among us, we must learn to carry out our economic activities sustainably. There are optimists out there, C&EN readers among them, who believe that the history of civilization is a long string of technological triumphs of humans over the limits of nature. In this view, the idea of a "carrying capacity" for Earth—a limit to the number of humans Earth's resources can support—is a fiction because technological advances will continuously obviate previously perceived limits. This view has historical merit. Dire predictions made in the 1960s about the exhaustion of resources ranging from petroleum to chromium to fresh water by the end of the 1980s or 1990s have proven utterly wrong. While I do not count myself as one of the technological pessimists who see technology as a mixed blessing at best and an unmitigated evil at worst, I do not count myself among the technological optimists either. There are environmental challenges of transcendent complexity that I fear may overcome **us and our** Earth before technological progress can come to our rescue. Global climate change, the accelerating destruction of terrestrial and oceanic habitats, the catastrophic loss of species across the plant and animal kingdoms—these are problems that are not obviously amenable to straightforward technological solutions. But I know this, too: Science and technology have brought us to where we are, and only science and technology, coupled with innovative social and economic thinking, can take us to where we need to be in the coming millennium. Chemists, chemistry, and the chemical industry—what we at C&EN call the chemical enterprise—will play central roles in addressing these challenges. The first section of this Special Report is a series called "Millennial Musings" in which a wide variety of representatives from the chemical enterprise share their thoughts about the future of our science and industry. The five essays that follow explore the contributions the chemical enterprise is making right now to ensure that we will successfully meet the challenges of the 21st century. The essays do not attempt to predict the future. Taken as a whole, they do not pretend to be a comprehensive examination of the efforts of our science and our industry to tackle the challenges I've outlined above. Rather, they paint, in broad brush strokes, a portrait of scientists, engineers, and business managers struggling to make a vital contribution to humanity's future. The first essay, by Senior Editor Marc S. Reisch, is a case study of the chemical industry's ongoing transformation to sustainable production. Although it is not well known to the general public, the chemical industry is at the forefront of corporate efforts to reduce waste from production streams to zero. Industry giants DuPont and Dow Chemical are taking major strides worldwide to manufacture chemicals while minimizing the environmental "footprint" of their facilities. This is an ethic that starts at the top of corporate structure. Indeed, Reisch quotes Dow President and Chief Executive Officer William S. Stavropolous: "We must integrate elements that historically have been seen as at odds with one another: the triple bottom line of sustainability—economic and social and environmental needs." DuPont Chairman and CEO Charles (Chad) O. Holliday envisions a future in which "biological processes use renewable resources as feedstocks, use solar energy to drive growth, absorb carbon dioxide from the atmosphere, use low-temperature and low-pressure processes, and produce waste that is less toxic." But sustainability is more than just a philosophy at these two chemical companies. Reisch describes ongoing Dow and DuPont initiatives that are making sustainability a reality at Dow facilities in Michigan and Germany and at DuPont's massive plant site near Richmond, Va. Another manifestation of the chemical industry's evolution is its embrace of life sciences. Genetic engineering is a revolutionary technology. In the 1970s, research advances fundamentally shifted our perception of DNA. While it had always been clear that deoxyribonucleic acid was a chemical, it was not a chemical that could be manipulated like other chemicals—clipped precisely, altered, stitched back together again into a functioning molecule. Recombinant DNA techniques began the transformation of DNA into just such a chemical, and the reverberations of that change are likely to be felt well into the next century. Genetic engineering has entered the fabric of modern science and technology. It is one of the basic tools chemists and biologists use to understand life at the molecular level. It provides new avenues to pharmaceuticals and new approaches to treat disease. It expands enormously agronomists' ability to introduce traits into crops, a capability seized on by numerous chemical companies. There is no doubt that this powerful new tool will play a major role in feeding the world's population in the coming century, but its adoption has hit some bumps in the road. In the second essay, Editor-at-Large Michael Heylin examines how the promise of agricultural biotechnology has gotten tangled up in real public fear of genetic manipulation and corporate control over food. The third essay, by Senior Editor Mairin B. Brennan, looks at chemists embarking on what is perhaps the greatest intellectual quest in the history of science—humans' attempt to understand the detailed chemistry of the human brain, and with it, human consciousness. While this quest is, at one level, basic research at its most pure, it also has enormous practical significance. Brennan focuses on one such practical aspect: the effort to understand neurodegenerative diseases like Alzheimer's disease and Parkinson's disease that predominantly plague older humans and are likely to become increasingly difficult public health problems among an aging population. Science and technology are always two-edged swords. They bestow the power to create and the power to destroy. In addition to its enormous potential for health and agriculture, genetic engineering conceivably could be used to create horrific biological warfare agents. In the fourth essay of this Millennium Special Report, Senior Correspondent Lois R. Ember examines the challenge of developing methods to counter the threat of such biological weapons. "Science and technology will eventually produce sensors able to detect the presence or release of biological agents, or devices that aid in forecasting, remediating, and ameliorating bioattacks," Ember writes. Finally, Contributing Editor Wil Lepkowski discusses the most mundane, the most marvelous, and the most essential molecule on Earth, H2O. Providing clean water to Earth's population is already difficult—and tragically, not always accomplished. Lepkowski looks in depth at the situation in Bangladesh—where a well-meaning UN program to deliver clean water from wells has poisoned millions with arsenic. Chemists are working to develop better ways to detect arsenic in drinking water at meaningful concentrations and ways to remove it that will work in a poor, developing country. And he explores the evolving water management philosophy, and the science that underpins it, that will be needed to provide adequate water for all its vital uses. In the past two centuries, our science has transformed the world. Chemistry is a wondrous tool that has allowed us to understand the structure of matter and gives us the ability to manipulate that structure to suit our own purposes. It allows us to dissect the molecules of life to see what makes them, and us, tick. It is providing a glimpse into workings of what may be the most complex structure in the universe, the human brain, and with it hints about what constitutes consciousness. In the coming decades, we will use chemistry to delve ever deeper into these mysteries and provide for humanity's basic and not-so-basic needs.

#### APS solves human embryonic development and fertility

**Xu 8** [“A Nuclear Receptor with Implications for a Host of Diseases”, Schoen W. Kruse, Kelly Suino-Powell, X. Edward Zhou, Jennifer E. Kretschman, Ross Reynolds, Clemens Vonrhein, Yong Xu, Liliang Wang, Sophia Y. Tsai, Ming-Jer Tsai, and H. Eric Xu, Press released of ‘Identification of COUP-TFII Orphan Nuclear Receptor as a Retinoic Acid–Activated Receptor,” PLoS Biology 6 (9), e277 (September 2008), Sept 25, 2008]

The crystal structure of the COUP-TFII receptor.¶ The molecular structure of a nuclear receptor that regulates the expression of specific genes within cells may serve as a drug target for diseases related to heart and blood-vessel development, human embryonic development, and female infertility, according to a team of researchers from the Van Andel Institute (VAI), Grand Valley State University, Global Phasing Ltd., and Baylor College of Medicine. The researchers, using an x-ray beamline at the U.S. Department of Energy’s Advanced Photon Source (APS) at Argonne National Laboratory, also found that the receptor, named COUP-TFII, is activated by retinoic acid, a form of Vitamin A.¶ "Not only does the structural information provide a basis for drug design in any diseases where COUP-TFII plays a role, but it also can provide insight into the entire subfamily of receptors to which COUP-TFII belongs, which could have implications for additional associated diseases," said Eric Xu of VAI, who with his colleagues authored the article on this study that was published in PLoS Biology.¶ The researchers determined the molecular structure of COUP-TFII via x-ray crystallography carried out at the DuPont-Northwestern-Dow Collaborative Access Team 5-ID-B,C,D beamline at the APS. Structural information such as this can help drug developers fit therapeutics more perfectly to the receptors they bind to for maximum potency, and can also aid in manipulating drugs to produce fewer side effects.¶ The findings could also have implications for cancer therapy. "Since COUP-TFII plays a role in embryonic blood vessel development, it might play a similar role in tumors and cancer growth," said Schoen Kruse, also from VAI and lead author of the study. "Formation of new blood supply in tumors is a stepping stone in the ability of cancers to grow and metastasize within the body."¶ The signal-triggering molecules, known as ligands — which activate nuclear receptors — have been discovered for most receptors, but not for a subset of “orphan” nuclear receptors whose ligand remains unknown. This study's finding that COUP-TFII is activated by retinoic acid is significant since the receptor previously belonged to this subset of orphan receptors.

#### Inevitable extinction otherwise

**Plimmer 11** [2011, Andrew Plimmer, “Are We Poisoning Ourselves Into Extinction?”, environmental activist from Australia]

Are We Poisoning Ourselves Into Extinction? ¶ Have you heard any of the disquieting reports on worldwide infertility and wondered if we are in the process of making the human race extinct with our continued usage of environmental toxins that affect both male and female infertility?¶ Besides affecting fertility, toxins have been proven to increase the risk of miscarriage in pregnant women.¶ If you aren’t up to speed on this scary topic, here are a few factoids that you may find startling, if not downright terrifying:¶ In 1938, only one half of 1% of males were functionally sterile. Functionally sterile means that the sperm count of a man is below 20 million viable sperm per milliliter of semen. Today, that percentage has increased 15 fold and is now between 8 and 12%. ¶ Dr. Cecil Jacobson ,Reproductive Genetics Center, Vienna, Virginia¶ Miscarriage is more likely to occur in women whose partners have a low sperm count. An average of 48% of the father’s sperm involved in female miscarriages were abnormal…some with two heads and two tails, for instance. By the same token, males who fathered normal pregnancies had 25% higher sperm counts and a mere 5% of abnormal sperm.¶ Drs. Mirjam Furuhjelm and Birgit Jonson ,Dept. of Obst. and Gyn., Sabbatsberg Hospital, Karolinska Institute, Stockholm, Sweden¶ In 1988, a study conducted by the United States National Center for Health Statistics estimated that of women aged 15-44, approximately 8.5% had a less than normal chance of becoming pregnant. ¶ Dr. Howard Jones , New England Journal of Medicine ,December 2, 1993 pg. 1710¶ Miscarriage rates are significantly higher among women living near agricultural areas where certain pesticides are used on crops. In fact, there is a huge 40% to 120% increase of miscarriage due to birth defects.¶ Epidemiology, March 2001¶ Pesticides are linked to male infertility. Studies have shown that infertile men are 10 times more likely to be employed in agricultural jobs using pesticides than men engaged in another, pesticide-free, line of work.¶ American Journal of Industrial Medicine, Vol. 24:587-592, 1983¶ The pesticide Chlordane was found to lower sperm count and damage the part of the male testicles that produce sperm. ¶ Drs. Khawla J. Balash, Muthanna A. Al-Omar ,Univ. of Baghdad, Biological Research Center¶ Approximately 75% of all American homes contain the pesticide Chlordane in the breathable air! ¶ Teratogenesis, Carcinogenesis, & Mutagenesis, Vol. 7:527-540, 1987¶ Women employed in microelectronics assembly using the cleaning solvents xylene, acetone, trichlorethylene, petroleum distillates and others have been found to have spontaneous abortion rates more than 4X normal. ¶ British Journal of Industrial Medicine, Vol. 47:400-404, 1990

#### Funding is irrelevant – scientists are motivated by prestige given by specific projects

**National Acadamies Press 12** [2012, Improving the Recruitment, Retention, and Utilization of Federal Scientists and Engineers: A Report to the Carnegie Commision on Science, Technology and Government, <http://www.nap.edu/openbook.php?record_id=2102&page=37>]

There have been no significant changes in NIST's workforce quality indicators—undergraduate grade-point averages, quality of graduate schools, and performance appraisal ratings—which traditionally have been high. Turnover rates, already very low, have not changed,¶ although surveys of leavers indicate that salary has become a less important reason for leaving. Department of Agriculture Demonstration The committee also heard presentations by officials from the U.S. Department of Agriculture (USDA) and its Agricultural Research Service (ARS) about a personnel demonstration project begun in mid-1990 in 140 experimental and 70 comparison sites of the Forest Service and the ARS. The project is largely a testing of a comprehensive simplification and decentralization of the hiring system, but it does include recruitment bonuses and relocation expenses and use of an extended probationary period for scientists in research positions.14 The committee heard that the recruitment incentives have been rarely used, although they were important in attracting a microbiologist and a plant physiologist. It is too early to evaluate the results of the longer probationary period on the retention and productivity of research scientists. Lessons While they are only quasi-experiments, and they do not measure the effects of the interventions on organizational effectiveness, other effects of the various interventions have been measured, the Navy and NIST demonstration projects are consistent with the proposition that a more flexible pay and position structure improves the ability of federal agencies to recruit more qualified scientists and engineers and to reward and motivate good performers and thus retain them. They also show that the direct cost of such efforts is modest, in part because the agencies can (and do, because of budget constraints) tailor the compensation package to each case rather than increase salaries across the board. In addition, the differences among the demonstrations designed by each agency to 14 The extended probationary period does not apply to foresters and other scientists not in research positions.¶ OCR for page 56¶ Improving the Recruitment, Retention, and Utilization of Federal Scientists and Engineers: A Report to the Carnegie Commision on Science, Technology and Government meet its needs show that the various mechanisms can and should be adapted to the particular conditions facing each agency. Thus the agencies faced with implementing FEPCA should consider it an opportunity to design their own recruitment and retention programs. Unfortunately, FEPCA does not include all the devices and flexibilities being used by the demonstration projects. Additional steps needed beyond FEPCA to improve the federal government's capacity to recruit well-qualified scientific and technological personnel are recommended in the last chapter. First, the next chapter discusses the flexibilities offered under FEPCA to agencies faced with attracting and keeping well-qualified scientists and engineers and identifies potential obstacles to effective implementation of FEPCA.

### Solvency

#### Contention 4: Solvency

#### Current loan guarantees aren’t enough – more on new reactor types are key to catalyze nuclear construction and solve nuclear leadership

**Belogolova 12** [National Journal Daily, July 19, 2012, “U.S. Nuclear Industry Seen Needing a Boost”, Olga Belogolova, lexis, khirn]

A robust nuclear-energy industry should be a high priority for the country's energy and national-security policy given the importance of the sector to global nonproliferation, according to a new report released on Thursday by the Bipartisan Policy Center's Nuclear Initiative . Specifically, the United States needs to lead in the licensing and development **of new reactors** and on safety reforms, management of spent nuclear fuel, the nuclear-export market, and research and development in the nuclear sector, according to the report led by former Sen. Pete Domenici, R-N.M., and former Energy Department Assistant Secretary for Nuclear Energy Warren (Pete) Miller. But leadership on nuclear issues could prove to be a challenge for the United States. Although the country has long led the charge on civilian nuclear power, the combination of a slowed electricity market, the lack of sweeping climate legislation, a natural-gas boom, and last year's Fukushima Daiichi nuclear accident in Japan have created obstacles for the development of new nuclear power in the United States in recent years. While the Nuclear Regulatory Commission this year has approved four new reactors for the Vogtle and Summer nuclear plants in Georgia and South Carolina, respectively, there are likely to only be a few more plants licensed in the United States in the near future. The story is very different on the international level. After Fukushima, countries such as Germany, Italy, Switzerland, and of course Japan have paused or slowed down their nuclear-energy development, but that hasn't stopped the rest of the world. Many other nations such as China, India, South Korea, and Russia have reaffirmed plans to expand their fleets of nuclear reactors, while some countries in the Middle East have even announced plans to develop nuclear energy for the first time. China alone, which has 26 new reactors under development, is expected to account for 40 percent of planned nuclear construction globally. The United States might be a leader now, accounting for nearly one-third of global nuclear generation, but it won't be long before others come out ahead of us, especially given how long it takes to construct new reactors, Domenici and Miller explained. "It will be increasingly difficult for the United States to maintain its technological leadership without some near-term domestic demand for new construction," they write in the report. In order to control the proliferation of nuclear weapons, the United States **needs to remain involved in everything** that happens to nuclear materials, from the export of nuclear fuel for energy use to the disposal of spent fuel. Given the global picture, Domenici and Miller suggest a shift in U.S. policies in order to ensure that the U.S. nuclear energy program is not stuck at a near-standstill. "Market signals alone are unlikely to result in a diverse fuel mix, so helping to maintain and improve a range of electricity supply options remains a role for federal policy," the two write in the report. "In particular, U.S. policy should be aimed at helping to preserve nuclear energy as an important technology option for near- or longer-term deployment." The vast shale-gas reserves in the United States and new technology to tap them will probably keep natural-gas prices low for the foreseeable future, making financing of more expensive nuclear power more difficult. **Federal loan guarantees have long been viewed as crucial to growing the nuclear industry**, but the Energy Department has dragged its feet on these conditional loans, especially after the bankruptcy of the federally funded solar firm Solyndra so much so that some companies have decided not to wait around and see what happens. Southern Company, which is building the first two new reactors to be approved in decades at its Vogtle nuclear plant in Georgia, on Thursday said that it is now considering doing so without federal support. The company had been waiting for an $8.33 billion loan guarantee to build the two new reactors, but Southern CEO Tom Fanning told Reuters on Thursday that talks with DOE were going slowly and they might not be willing to wait any longer.

#### Loan guarantees attract private capital – increases are key

**Peskoe 12** [Ari Peskoe, associate in the law firm of McDermott Will and Emery LLP and focuses his practice on regulatory, legislative, compliance, and transactional issues related to energy markets, 4-20-2012, "A Solution Looking For a Problem: Building More Nuclear Reactors after Vogtle," The Electricty Journal, vol 25 issue 3, Science Direct]

Given the checkered history of reactor construction projects,56 private lenders are understandably skittish about lending billions of dollars to develop a new reactor. Construction of the Vogtle and SCANA reactors will be a critical test, and significant cost overruns on these two projects could doom the prospects for construction of additional reactors. Even if the construction of Vogtle and SCANA are on budget, it will likely still be difficult for future project developers to raise enough debt financing without government support.57 Federal loan guarantees shift “a large part of the learning costs and construction risks” from private lenders to the federal government by ensuring that lenders receive payment in the event that the developer defaults on repayments.58 Appropriations for the guarantees authorized by the Energy Policy Act of 2005 will soon run out, so future guarantees will require congressional action.59¶ Loan guarantees cost the federal government little or nothing unless there is an event of default.60 Creating a long-term guarantee program would be entirely consistent with the government's historic role in accepting risks and liabilities of nuclear power. Although it has not been implemented effectively, the Nuclear Waste Policy Act (NWPA) of 1982 requires the DOE to transport nuclear waste from privately owned reactors to permanent government storage facilities.61 Concerned about a “cloud of bankruptcy” hanging over its operations,62 the nascent nuclear industry pushed Congress to pass the Price-Anderson Act in 1957, which indemnifies the industry against claims arising from a nuclear incident. Both the NWPA and the Price-Anderson Act socialize costs of nuclear energy. In the case of the NWPA, the industry pays the DOE a tenth of a penny for each kilowatt-hour of nuclear energy sold to fund waste disposal activities.63 The Price-Anderson Act also requires generators to contribute to a fund, but the federal treasury would likely cover much of the liabilities associate with a nuclear disaster.64

#### And, loan guarantees solve nuclear expansion – shows investors the government has skin in the game, and incentivizes quick agency approval

Adams 10—Publisher of Atomic insights Was in the Navy for 33 years Spent time at the Naval Academy Has experience designing and running small nuclear plants (Rod, Concrete Action to Follow Strongly Supportive Words On Building New Nuclear Power Plants, atomicinsights.com/2010/01/concrete-action-to-follow-strongly-supportive-words-on-building-new-nuclear-power-plants.html)

Loan guarantees are important to the nuclear industry because the currently available models are large, capital intensive projects that need a stable regulatory and financial environment. The projects can be financed because they will produce a regular stream of income that can service the debt and still provide a profit, but that is only true if the banks are assured that the government will not step in at an inopportune time to halt progress and slow down the revenue generation part of the project. Bankers do not forget history or losses very easily; they want to make sure that government decisions like those that halted Shoreham, Barnwell’s recycling facility or the Clinch River Breeder Reactor program are not going to be repeated this time around. For the multi-billion dollar projects being proposed, bankers demand the reassurance that comes when the government is officially supportive and has some “skin in the game” that makes frivolous bureaucratic decisions to erect barriers very expensive for the agency that makes that decision. I have reviewed the conditions established for the guarantee programs pretty carefully – at one time, my company ([Adams Atomic Engines, Inc.](http://www.atomicengines.com)) was considering filing an application. The loan conditions are strict and do a good job of protecting government interests. They were not appropriate for a tiny company, but I can see where a large company would have less trouble complying with the rules and conditions. The conditions do allow low or no cost intervention in the case of negligence or safety issues, but they put the government on the hook for delays that come from bad bureaucratic decision making.

#### Manhattan Project approach key to catalyze quick investment in IFRs – perception is non-unique, there is government investment now

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Q. If this is really so good, how come GE isn't building S-PRISM on their own nickel?¶ Nobody wants to risk it since it isn't a slam dunk. You don't get a reward if you solve global warming. And government funding doesn't seem to be so easy. DOE tried to get funding for GNEP (which included IFR technology) and got shot down (so far).¶ GE is a large conservative corporation. They already service a fleet of lightwater reactors, are building more of them around the world, and have the promise of yet more. It's hard enough in this country to move into new levels of reactor technology without trying to leapfrog straight into the 4th generation. Their 3rd generation ESBWR is in the 5th round of NRC certification, whereas the S-PRISM (a souped up and more developed version of the PRISM) isn't at the starting gate. These things take years at the glacial pace of the NRC, though of course if President Obama decided to go all Manhattan project on it we could most definitely get there quickly enough. If GE started pushing 4th generation breeder reactors, can you imagine the hue and cry from the antie groups? What's their incentive to do that? If they're convinced that ultimately we'll end up at 4th generation reactors anyway and they can make plenty of dough and keep a low profile just taking the go slow approach, don't you imagine that's exactly what they'll do? Besides, conceivably another country with whom we have nuclear technology sharing agreements might very well certify and build it before the NRC ever gets out of the starting gate, which would make it much easier for the eventual NRC certification. Q. If this is really so good, how come someone in government isn't trying to get it restarted?¶ The DOE is attempting to resuscitate fast-reactor technology, as part of the GNEP (Global Nuclear Energy Partnership) initiative. See¶ http://www.gnep.energy.gov/gnepPRs/gnepPR011007.html, and http://www.gnep.energy.gov/.¶ The IFR is one form of fast-reactor technology (metallic fuel with pyroprocessing), but there are others -- inferior, according to the IFR scientists. The important thing these days is to get the U.S. back into a leadership role in the development and management of nuclear power, recognizing that recycling in fast reactors is necessary if the long-lived waste is to be consumed, and if the full energy potential of the uranium is to be exploited. The GNEP would resuscitate fast-reactor technology in this country.

#### Plan is modeled internationally

**Blees et al** 11 (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) <http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/>

There are many compelling reasons to pursue the rapid demonstration of a full-scale IFR, as a lead-in to a subsequent global deployment of this technology within a relatively short time frame. Certainly the urgency of climate change can be a potent tool in winning over environmentalists to this idea. Yet political expediency—due to widespread skepticism of anthropogenic causes for climate change—suggests that the arguments for rolling out IFRs can be effectively tailored to their audience. Energy security—especially with favorable economics—is a primary interest of every nation.¶ The impressive safety features of new nuclear power plant designs should encourage a rapid uptick in construction without concern for the spent fuel they will produce, for all of it will quickly be used up once IFRs begin to be deployed. It is certainly manageable until that time. Burying spent fuel in non-retrievable geologic depositories should be avoided, since it represents a valuable clean energy resource that can last for centuries even if used on a grand scale.¶ Many countries are now beginning to pursue fast reactor technology without the cooperation of the United States, laboriously (and expensively) re-learning the lessons of what does and doesn’t work. If this continues, we will see a variety of different fast reactor designs, some of which will be less safe than others. Why are we forcing other nations to reinvent the wheel? Since the USA invested years of effort and billions of dollars to develop what is arguably the world’s safest and most efficient fast reactor system in the IFR, and since several nations have asked us to share this technology with them (Russia, China, South Korea, Japan, India), there is a golden opportunity here to develop a common goal—a standardized design, and a framework for international control of fast reactor technology and the fissile material that fuels them. This opportunity should be a top priority in the coming decade, if we are serious about replacing fossil fuels worldwide with sufficient pace to effectively mitigate climate change and other environmental and geopolitical crises of the 21st century.

#### IFR’s S-PRISM design is really safe

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

Metal Fuel: The Ultimate Safety Valve¶ One of the most important of the many superlatives of the IFR is its use of a metal fuel comprised of uranium, plutonium and zirconium, and the ingenious manner in which the Argonne team solved the problems of fuel expansion and fuel fabrication, as well as the potentially dangerous overheating scenario. Unlike the fuel fabrication of oxide-fueled reactors that requires the dimensions of the fuel pellets to be uniform to very exacting tolerances, the metal fuel for the IFR can be simply injected into molds and then cooled and inserted into metal tubes (cladding) with a great deal of dimensional tolerance, with a sodium bond filling any voids. If an accident situation occurs that would cause the core to overheat, such as a loss of coolant flow accident, the metal fuel itself will expand, causing neutron leakage to terminate the chain reaction, relying on nothing but the laws of physics.¶ The passive safety characteristics of the IFR were tested in EBR-II on April 3, 1986, against two of the most severe accident events postulated for nuclear power plants. The first test (the Loss of Flow Test) simulated a complete station blackout, so that power was lost to all cooling systems. The second test (the Loss of Heat Sink Test) simulated the loss of ability to remove heat from the plant by shutting off power to the secondary cooling system. In both of these tests, the normal safety systems were not allowed to function and the operators did not interfere. The tests were run with the reactor initially at full power.¶ In both tests, the passive safety features simply shut down the reactor with no damage. The fuel and coolant remained within safe temperature limits as the reactor quickly shut itself down in both cases. Relying only on passive characteristics, EBR-II smoothly returned to a safe condition without activation of any control rods and without action by the reactor operators. The same features responsible for this remarkable performance in EBR-II will be incorporated into the design of future IFR plants, regardless of how large they may be [xi].¶ While the IFR was under development, a consortium of prominent American companies led by General Electric collaborated with the IFR team to design a commercial-scale reactor based upon the EBR-II research. This design, currently in the hands of GE, is called the PRISM (Power Reactor Innovative Small Module). A somewhat larger version (with a power rating of 380 MWe) is called the S-PRISM. As with all new nuclear reactor designs (and many other potentially hazardous industrial projects), probabilistic risk assessment studies were conducted for the S-PRISM. Among other parameters, the PRA study estimated the frequency with which one could expect a core meltdown. This occurrence was so statistically improbable as to defy imagination. Of course such a number must be divided by the number of reactors in service in order to convey the actual frequency of a hypothetical meltdown. Even so, if one posits that all the energy humanity requires were to be supplies solely by IFRs (an unlikely scenario but one that is entirely possible), the world could expect a core meltdown about once every 435,000 years [xii]. Even if the risk assessment understated the odds by a factor of a thousand, this would still be a reactor design that even the most paranoid could feel good about.

#### IFR fuel can be obtained from seawater – makes energy infinite

Archambeauet all 11 [The Integral Fast Reactor (IFR): An Optimized Source for Global Energy Needs, Charles Archambeau, Science Council for Global Initiatives, Randolph Ware, Cooperative Institute for Research in Environmental Sciences, Tom Blees, National Center for Atmospheric Research, Barry Brook, University of Adelaide, Jerry Peterson, Argonne National Laboratory,¶ Yoon Chang, University of Colorado, February 2011]

The pyroprocessor unit can be used as a stand-alone system to process LWR waste from¶ any open cycle reactor into fuel for IFR closed cycle reactors. The depleted Uranium¶ produced by the enrichment of Uranium ore can also be processed to generate additional¶ IFR fuel. The current amount of LWR waste, plus the amount of depleted Uranium in¶ stock piles world-wide, is sufficient to supply fuel to all the IFR plants needed and in fact¶ to supply the world's required energy for about 1000 years.3 The problem of storage of¶ current LWR waste and depleted Uranium waste from refining of mined Uranium is¶ therefore solved by pyroprocessor generation of IFR fuel, along with a relatively small¶ mass of short-lived fission products which can be easily and safely stored. Uranium can¶ also be extracted from sea water using IFR power sources (see, for example, Cohen, 1983).¶ Because Uranium is constantly added to seawater by erosion processes, then the IFR fuel¶ source is effectively unlimited. Therefore, IFR power plants do not require fuel from¶ regular mining operations, as does a LWR powered plant, but can use pyroprocessor¶ generated fuel essentially indefinitely. In this sense the IFR is a "renewable" energy source¶ which can be expanded, essentially indefinitely, to meet demand.

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#### Federal budget actually ended up preserving Argonne

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(4/15/11 Federal Budget Agreement Preserves Argonne Funding http://darien-il.patch.com/articles/federal-budget-agreement-preserves-argonne-funding)

While the federal government nearly shut down last week amid legislators’ inability to agree on a 2011 budget, the main question locally was how the bill that resulted from those talks would impact funding at Argonne National Laboratory.

In February, the House of Representatives voted to approve a spending bill that would have slashed key funding sources for the Darien-area energy lab.

Argonne officials estimated the proposed cuts would have forced it to layoff about one-third of its 3,000 employees. Fermilab, in Batavia, would have reportedly had to trim one-quarter of its staff.

But when both the House and Senate voted on a final compromise bill Thursday, Argonne’s funding emerged largely intact, averting a scenario Sen. Dick Durbin, D-IL, said would devastate U.S. innovation.

The final budget funds the Office of Science at nearly $4.9 billion, an increase of $866 million over what House Republicans proposed in February’s bill.

“This is good news for Fermilab, Argonne and the communities surrounding the labs in Batavia and DuPage County,” Durbin said Wednesday as Congress neared its vote on the compromise. “The current budget agreement keeps America’s commitment to investing in innovative research while cutting spending by over $78 billion.”

### AT: Ice Age

#### **Warming causes extinction**

Costello 11 –, Anthony, Institute for Global Health, University College London, Mark Maslin, Department of Geography, University College London, Hugh Montgomery, Institute for Human Health and Performance, University College London, Anne M. Johnson, Institute for Global Health, University College London, Paul Ekins, Energy Institute, University College London [“Global health and climate change: moving from denial and catastrophic fatalism to positive action” May 2011 vol. 369 no. 1942 1866-1882 Philosophical Transactions of the Royal Society]

Advocacy about the health consequences will ensure that climate change is a high priority. The United Nations Convention on Climate Change was set up in 1992 to ensure that nations worked together to minimize the adverse effects, but McMichael and Neira noted that, in preparation for the Copenhagen conference in December 2009, only four of 47 nations mentioned human health as a consideration [1]. With business as usual, global warming caused by rising greenhouse gas (GHG) emissions will threaten mass populations through increased transmission of some infections, heat stress, food and water insecurity, increased deaths from more frequent and extreme climate events, threats to shelter and security, and through population migration [2]. On the one hand it is necessary in the media to counter climate change sceptics and denialists, but on the other it is also important not to allow climate catastrophists, who tell us it is all too late, to deflect us from pragmatic and positive action. Catastrophic scenarios are possible in the longer term, and effective action will be formidably difficult, but evidence suggests that we do have the tools, the time and the resources to bring about the changes needed for climate stability. 2. Climate change evidence and denial Given the current body of evidence, it is surprising that global warming and its causal relationship with atmospheric GHG pollution is disputed any more than the relationship between acquired immune deficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection, or lung cancer and cigarette smoking. The basic principles that determine the Earth’s temperature are, of course, relatively simple. Some of the short-wave solar radiation that strikes the Earth is reflected back into space and some is absorbed by the land and emitted as long-wave radiation (heat). Some of the long-wave radiation is trapped in the atmosphere by ‘greenhouse gases’, which include water vapour, carbon dioxide and methane. Without GHGs the Earth would be on average 33◦C colder. Over the last 150 years, since the Industrial Revolution, humans have been adding more carbon dioxide and methane into the atmosphere. The result is that the Earth’s atmosphere, ocean and land are indeed warming—due to increased atmospheric ‘greenhouse gas’ concentrations [3]. Gleick et al. [4], from the US National Academy of Sciences, wrote a letter to Science stating ‘There is compelling, comprehensive, and consistent objective evidence that humans are changing the climate in ways that threaten our societies and the ecosystems on which we depend’. The most recent report by the Intergovernmental Panel on Climate Change (IPCC) [5], amounting to nearly 3000 pages of detailed review and analysis of published research, also declares that the scientific uncertainties of global warming are essentially resolved. This report states that there is clear evidence for a 0.75◦C rise in global temperatures and 22 cm rise in sea level during the twentieth century. The IPCC synthesis also predicts that global temperatures could rise further by between 1.1◦C and 6.4◦C by 2100, and sea level could rise by between 28 and 79 cm, or more if the melting of Greenland and Antarctica accelerates. In addition, weather patterns will become less predictable and the occurrence of extreme climate events, such as storms, floods, heat waves and droughts, will increase. There is also strong evidence for ocean acidification driven by more carbon dioxide dissolving in the oceans [6]. Given the current failure of international negotiations to address carbon emission reductions, and that atmospheric warming lags behind rises in CO2 concentration, there is concern that global surface temperature will rise above the supposedly ‘safe limit’ of 2◦C within this century. Each doubling of atmospheric carbon dioxide concentration alone is expected to produce 1.9–4.5◦C of warming at equilibrium [7]. Of course, climate modelling is an extremely complex process, and uncertainty with projections relating to future emissions trajectories means that the time scale and magnitude of future climate change cannot be predicted with certainty [8]. These uncertainties are magnified when future climate predictions are used to estimate potential impacts. For example, the environmental impacts of climate change are also uncertain, but could underestimate such impacts because they detrimentally interact with habitat loss, pollution and loss of biodiversity due to other causes. There is also the additional problem that switching from biome to biome may not be directly reversible. For example, rainforest recycles a huge amount of water so it can survive a significant amount of aridification before it burns and is replaced by savannah. But the region then has to get much wetter before rainforest can return, as there is greatly reduced water cycling in savannah [9]. In the policy arena, further uncertainty surrounds the desire for international agreements on emission cuts, and the possible routes to such agreement and implementation. The feasible speed of technological innovation in carbon capture and provision of renewable/low-carbon energy resources is also uncertain. Denying the causes or the current weight of evidence for anthropogenic climate change is irrational, just as the existence of ‘uncertainties’ should not be used to deny the need for proportionate action, when such uncertainties could underestimate the risks and impact of climate change. There is no reason for inaction and there are many ways we can use our current knowledge of climate change to improve health provision for current and future generations. 3. Catastrophism At the other end of the scale are doom-mongers who predict catastrophic population collapse and the end of civilization. In the early nineteenth century, the French palaeontologist Georges Cuvier first addressed catastrophism and explained patterns of extinction observed in the fossil record through catastrophic natural events [10]. We know now of five major extinctions: the Ordovician–Silurian extinction (439 million years ago), the Late Devonian extinction (about 364 million years ago), the Permian–Triassic extinction (about 251 million years ago), the End Triassic extinction (roughly 199 million to 214 million years ago) and the Cretaceous– Tertiary extinction (about 65 million years ago). These mass extinctions were caused by a combination of plate tectonics, supervolcanism and asteroid impacts. The understanding of the mass extinctions led Gould & Eldredge [11] to update Darwin’s theory of evolution with their own theory of punctuated equilibrium. Many scientists have suggested that the current human-induced extinction rates could be as fast as those during these mass extinctions [12,13]. For example, one study predicted that 58 per cent of species may be committed to extinction by 2050 due to climate change alone [14], though this paper has been criticized [15,16]. Some people have even suggested that human extinction may not be a remote risk [17–19]. Sherwood & Huber [7] point to continued heating effects that could make the world largely uninhabitable by humans and mammals within 300 years. Peak heat stress, quantified by the wet-bulb temperature (used because it reflects both the ambient temperature and relative humidity of the site), is surprisingly similar across diverse climates and never exceeds 31◦C. They suggest that if it rose to 35◦C, which never happens now but would at a warming of 7◦C, hyperthermia in humans and other mammals would occur as dissipation of metabolic heat becomes impossible, therefore making many environments uninhabitable.

#### Warming shuts down the thermohaline circulation and causes an ice age – that kills ocean ecosystems

**Huey 11** – writer at Greeniacs, a nonpolitical climate organization (Miranda, “Thermohaline Circulation,” February 9th (last updated) http://www.greeniacs.com/GreeniacsArticles/Global-Warming/Thermohaline-Circulation.html)

Most climatologists warn that global warming will most likely slow down the thermohaline circulation cycle by 10-50%% within the next 100 years.2 A warming climate could speed up the melting of Arctic glaciers, diluting the salty surface water with a large amount of freshwater. In addition, a changing northern climate could mean more rain and snow over the region, diluting the surface water even further. A warmer planet could also mean a warmer Arctic climate, which would warm the surface waters relative to the cooler seawater below. If the surface water never gets denser than the water below it, it may not sink below the cool and salty seawater below, preventing the current from ever entering the “global ocean conveyor belt.” So, first of all, what exactly is thermohaline circulation? It’s a cycle that drives of what is commonly known as the “ocean’s conveyor belt”—a 1,600 year long process in which all ocean water will flow—twisting and turning around the globe, rising and falling in sea depth, and eventually returning to the same spot to start the cycle over again.3 Put simply, this “conveyor belt” runs because cold water is denser than warm water and salt water is denser than fresh water. In warm, tropical climates, the sun will heat up the surface of the ocean, making the top layer of seawater less dense. In the Atlantic, the warm water then flows northward onto the colder, denser waters of cooler, northern regions. The water below it can then rise to the surface and get warmed as well, continuing the process. As the seawater travels north, it encounters more wind and evaporates some, getting saltier and cooler. Eventually, near the Arctic, the surface water gets so cold and salty that it sinks down to the ocean floor, where it flows all the way south to the Antarctic and then through equatorial areas the Indian Ocean or Pacific Ocean, where the seawater warms up again and rises to the surface, flowing back to the Atlantic to start the cycle over again.4 The consequences for both marine life and life on land could be drastic if thermohaline circulation slowed down. Thermohaline circulation which mixes ocean layers is key to providing nutrients to marine life on the ocean surface. For example, phytoplankton only live on the surface of the ocean’s waters because it largely subsists off the energy it receives from natural sunlight. Phytoplankton that die slowly sink to the ocean floor, decomposing and carrying nutrients that make it back up to the surface through thermohaline circulation. Without enough nutrients, phytoplankton growth could be limited, cutting off the bottom of the food chain for marine ecosystems.5 As bad as a slowing thermohaline circulation would be, it would not be nearly as disastrous as the ocean conveyor belt stopping completely and abruptly. Most scientists deem that worst-case scenario as a “low-probability, high-impact” event.6 Interestingly, BP CEO Tony Hayward said the same exact thing about the Gulf of Mexico oil spill.7 Although an abruptly stopped thermohaline circulation event was made famous in the movie The Day After Tomorrow, the Union of Concerned Scientists have made assurances that it will not be nearly as quick, widespread, or cause another Ice Age.8 Even under the fastest climate model, it would instead take a few decades and cause only regional cooling. Why would scientists think that thermohaline circulation stop abruptly? It already happened once, 8,200 years ago.9 According to evidence from ice cores, a century long cold spell during the Younger Dryas coincided with a flood of freshwater from melting glaciers, as well as the halting of the thermohaline circulation.10 Many scientists theorize that the rapid introduction of freshwater into ocean surfaces immediately stopped thermohaline circulation, inducing the massive global cooling of an average of 15 degrees.11 Some scientists predict that global warming will cause enough glacial melting to trigger another abrupt cold spell. Other scientists counter that the melting glaciers, cold spell, and halting thermohaline circulation were caused by separate factors or a broader natural cycle. Nevertheless, if an abrupt shut-down occurred, the consequences would be catastrophic. Thermohaline circulation is responsible for Europe’s warm temperatures relative to other countries at the same latitude. Warm surface waters from the south drift north towards Europe from equatorial regions, providing a moderate climate.12 Shutting it off could mean a regional ice age for northern latitudes. To a smaller degree, the same could go for the East Coast of the United States, since the warmer tropical current also flows northward along the coast.13 It could disrupt ecosystems, reducing agriculture, and increasing storms. A global warming trend could minimize or reverse some of these effects. Equatorial regions, on the other hand, could heat up and experience massive drought and famine.14

**No ice age**

**Berger and Loutre, 2—** Université catholique de Louvain, Institut d'Astronomie et de Géophysique**,** [André. and M.F., “An Exceptionally Long Interglacial Ahead?” *Science* 23 August, Vol. 297. no. 5585, pp. 1287 – 1288]

When paleoclimatologists gathered in 1972 to discuss how and when the present warm period would end (1), a slide into the next glacial seemed imminent. But more recent studies point toward a different future: a long interglacial that may last another **50,000 years**. An interglacial is an uninterrupted warm interval during which global climate reaches at least the preindustrial level of warmth. Based on geological records available in 1972, the last two interglacials (including the Eemian, ~125,000 years ago) were believed to have lasted about 10,000 years. This is about the length of the current warm interval--the Holocene--to date. Assuming a similar duration for all interglacials, the scientists concluded that "it is likely that the present-day warm epoch will terminate relatively soon if man does not intervene" (1, p. 267). Some assumptions made 30 years ago have since been questioned. Past interglacials may have been longer than originally assumed (2). Some, including marine isotope stage 11 (MIS-11, 400,000 years ago), may have been warmer than at present (3). We are also increasingly aware of the intensification of the greenhouse effect by human activities (4). But even without human perturbation, future climate may not develop as in past interglacials (5) because the forcings and mechanisms that produced these earlier warm periods may have been quite different from today's. Most early attempts to predict future climate at the geological time scale (6, 7) prolonged the cooling that started at the peak of the Holocene some 6000 years ago, predicting a cold interval in about 25,000 years and a glaciation in about 55,000 years. These projections were based on statistical rules or simple models that did not include any CO2 forcing. They thus implicitly assumed a value equal to the average of the last glacial-interglacial cycles [~225 parts per million by volume (ppmv) (8)]. But some studies disagreed with these projections. With a simple ice-sheet model, Oerlemans and Van der Veen (9) predicted a long interglacial lasting another 50,000 years, followed by a first glacial maximum in about 65,000 years. Ledley also stated that **an ice age is unlikely to begin in the next 70,000 years** (10), based on the relation between the observed rate of change of ice volume and the summer solstice radiation. Other studies were more oriented toward modeling, including the possible effects of anthropogenic CO2 emissions on the dynamics of the ice-age cycles. For example, according to Saltzman et al. (11) an increase in atmospheric CO2, if maintained over a long period of time, could trigger the climatic system into a stable regime with small ice sheets, if any, in the Northern Hemisphere. Loutre (12) also showed that a CO2 concentration of 710 ppmv, returning to a present-day value within 5000 years, could lead to a collapse of the Greenland Ice Sheet in a few thousand years. On a geological time scale, climate cycles are believed to be driven by changes in insolation (solar radiation received at the top of the atmosphere) as a result of variations in Earth's orbit around the Sun. Over the next 100,000 years, the amplitude of insolation variations will be small (see the figure), much smaller than during the Eemian. For example, at 65ºN in June, insolation will vary by less than 25 Wm-2 over the next 25,000 years, compared with 110 Wm-2 between 125,000 and 115,000 years ago. From the standpoint of insolation, the Eemian can hardly be taken as an analog for the next millennia, as is often assumed. The small amplitude of future insolation variations is **exceptional**. One of the few past analogs (13) occurred at about 400,000 years before the present, overlapping part of MIS-11. Then and now, very low eccentricity values coincided with the minima of the 400,000-year eccentricity cycle. Eccentricity will reach almost zero within the next 25,000 years, damping the variations of precession considerably.

**Tech can stop the Ice Age**

### Warming Adv – AT: Timeframe 2AC

#### We can build them really quickly

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

How Fast Can We Build Them?¶ During France’s nuclear building boom they built an average of six nuclear power plants per year, culminating in a situation that provides them with about 80% of their electrical needs while making electricity their fourth-largest export earner. Gross Domestic Product (GDP) can be used as a rough guide to what a given country can financially bear for such a project, keeping in mind that France proceeded without the sense of urgency that the world today should certainly be ready to muster. There are six countries with higher GDPs than France, all of whom already possess the technology to build fast reactors: USA, China, Japan, India (they’re building one now), Germany, and the United Kingdom. Add Canada and Russia (which already has a commercial fast reactor running and is planning more), then tally up the GDP of these eight countries. At the rate of 6 plants per year (~ 1GW each) at the equivalent of France’s GDP, these countries alone could afford to build about 117 power plants per year, even without any greater urgency than the French brought to bear on their road to energy independence.¶ Consider that there are about 400 nuclear power plants in the world today. At this entirely feasible rate of construction we could more than double the planet’s nuclear capacity in just four years. Remember, the French accomplished their transformation with non-modular, albeit standardized, Gen II designs. Modular construction, passive safety systems, and factory fabrication, divided among companies all over the planet, could realistically convert the planet’s electricity production to virtually all nuclear in a couple decades, with abundant surplus electricity for ancillary uses such as desalination and the production of liquid fuels such as ammonia.

### A2 123

#### This is incoherent – the IFR uses reprocessing – America would let them use the IFR after the plan, solving their concerns

#### No backlash – case-by-case basis inevitable

Grossman, 10/5/12 [U.S. Envoy Touts Trade Norms for Curbing Sensitive Nuclear Activities, Elaine, Global Security Newswire¶ <http://www.nti.org/gsn/article/us-envoy-touts-trade-norms-curbing-sensitive-nuclear-activities/>]

Some prominent nonproliferation experts -- [Democrats and Republicans](http://www.nti.org/gsn/article/bipartisan-house-report-castigates-obama-nuclear-trade-policy/) alike -- have [called](http://www.nti.org/gsn/article/us-nuclear-trade-policy-concerns-mounting-capitol-hill/) for the inclusion of explicit provisions in future U.S. atomic cooperation pacts that would bar a partner state from domestic enrichment or reprocessing. In exchange, Washington would allow access to U.S. technologies and sensitive materials useful for peaceful nuclear power generation.¶ The Obama administration, however, has not embraced a policy of this kind. Instead, it has said Washington would demand what it has called the “gold standard” of a no-enrichment-or-reprocessing pledge only on a “[case-by-case](http://www.nti.org/gsn/article/administration-letter-promises-case-case-approach-nuclear-trade-deals/)” basis in nuclear trade talks with foreign nations. Officials with the Energy and State departments have argued that to do otherwise could alienate potential trade partners and put its international nuclear cooperation -- and any associated U.S. jobs -- at risk.¶

#### No link – the plan’s leverage is economic in origin, not political, which already exists now – Obama’s stance is inevitable now, so only the plan can solve by promoting reprocessing

**Viski 12** [“It's Not as Easy as 1-2-3 : The Obama Team Fights over How to Promote Nuclear Energy Without Promoting Nuclear Weapons”, Foreign Policy, Andrea, foreign policy analyst, August 1, 2012]

In 2009, the United States seemed to signal a hard-line approach when it agreed to cooperate with the United Arab Emirates (UAE) on civilian nuclear technology only on the condition that the country not pursue the ability to enrich uranium to make fresh nuclear fuel or to reprocess plutonium from spent nuclear fuel to recycle it in reactors. These technologies, as every casual Iran watcher now knows, are the same as those used to make fissile material for a nuclear bomb. Officials from George W. Bush's administration subsequently described the UAE pledge as the "gold standard" for new nuclear cooperation accords -- known as "123 agreements."¶ The Obama administration has been more hesitant, saying instead that each new 123 agreement would be negotiated on a case-by-case basis. In other words, the administration would try to replicate the ban on enrichment and reprocessing when possible, while strongly suggesting that the UAE was a unique circumstance. That disappointed many nonproliferation experts -- both within the administration and without -- who believed that Washington was surrendering an opportunity to stem the spread of enrichment and reprocessing technology, even as the president continued to warn of the danger from weapons-usable nuclear material falling into the wrong hands. The gold standard languished in another policy review while the administration continued to negotiate 123 agreements -- until last week anyway, when, according to a report published in National Journal, the State Department made a play for a new 123 agreement with Taiwan.¶ The Obama administration largely finds itself an accidental architect of the new civil nuclear order. In addition to a new wave of countries seeking nuclear help from the United States, many 123 agreements that were negotiated 30 years ago -- during the last wave of enthusiasm for nuclear power -- will expire between now and 2014. When this flurry of activity ends, the United States will have negotiated more than a dozen nuclear cooperation agreements in a four-year period, many with the most important emerging nuclear powers. Dick Stratford, a senior State Department official, told a conference that he carried around a little list in his pocket because he had trouble keeping all the negotiations straight.¶ Although the moment is largely one of circumstance, the Obama administration has revealed a distinct philosophical approach, taking a market-oriented approach to discouraging new countries from building their own facilities for enrichment and reprocessing (sometimes called "ENR"). In practice this means exploring how to offer fuel-cycle services at reasonable prices and providing assurances that states that rely on the market, rather than their own capabilities, will not have their supply of fuel disrupted. The thinking goes that the United States can best discourage states from developing their own enrichment and reprocessing capabilities by ensuring that the nuclear industry provides such comprehensive fuel services as part of any agreement to sell nuclear reactors. If that helps U.S. industry and its international partners, all the better. (This is not yet a capability that U.S. industry can provide, particularly in the arena of taking back spent nuclear fuel.) The Obama administration has also supported the creation of separate U.S. and International Atomic Energy Agency (IAEA) "fuel banks" that would provide states that relied on the market a supplier of last resort in the event of a disruption in the supply of nuclear fuel.

#### War won’t escalate

**Lankov 1/12**—Russian scholar of Asia and a specialist in Korean studies, attended Pyongyang's Kim Il-sung University, professor of history at Kookmin University in Seoul, PhD (Andrei, 12 January 2011, “Push could soon turn to shove,” http://www.atimes.com/atimes/Korea/MA12Dg02.html, RBatra)

**Far more likely, though, is that the situation will remain under control**. In this case, the excessive reaction by the South Koreans is likely to amplify the message their North Korean adversaries want to deliver.

North Korean strategists want to damage the South Korean economy as well as create domestic tension, which will eventually turn the South Korean public against the current South Korean government and its North Korean policy. However, if such an exchange of fire happens we can be certain that the international media will not be merely writing about a "war that is about to start in Korea" but rather will declare that a "war started in Korea". The impact of such reports on the world markets and, eventually, on the South Korean economy is easy to predict.

### AT: Moral Hazard/Distortion

#### Even with adverse selection or moral hazards imposed by loan guarantees, comprehensive studies show it’s the only way o garner investment

**Congressional Budget Office 11** [“Federal Loan Guarantees for the Construction of Nuclear Power Plants, august 3, 2011, khirn]

Among the goals often posited for federal energy policy are to enhance energy security by diminishing the nation's reliance on foreign oil, to meet a growing demand for electricity, and to reduce greenhouse gas emissions by encouraging investment in clean energy production and technologies. To help further such objectives, the Energy Policy Act of 2005 (Public Law 109-58) established incentives to encourage private investment in innovative technologies, including advanced nuclear energy facilities. Much of the support for such investment is provided under title XVII of that legislation, which offers federal loan guarantees for the construction of nuclear power plants and other types of "alternative" energy facilities. Administered by the Department of Energy (DOE), the loan guarantee program encourages private investment in nuclear energy by lowering the cost of borrowing and possibly increasing the availability of credit for project sponsors—usually an individual utility, a consortium of utilities, or a merchant power producer. In exchange for providing a loan guarantee, DOE is authorized to charge sponsors a fee that is meant to recover the guarantee's estimated budgetary cost. However, budgetary cost estimates—which are calculated as required under the Federal Credit Reform Act of 1990 (FCRA)—are not a comprehensive measure of the cost to taxpayers of those guarantee commitments. Specifically, FCRA estimates do not recognize that the government's assumption of financial risk has costs for taxpayers that exceed the average amount of losses that would be expected from defaults; those additional costs arise because a borrower is most likely to default on a loan and fail to make the promised payments of principal and interest during times of economic stress, when the losses are especially painful for taxpayers. Consequently, the estimated budgetary cost of a guarantee is generally lower than its estimated "fair-value" cost, which approximates the market price that a private guarantor would charge for an obligation with similar risk and expected returns. Because budgetary cost estimates are not a comprehensive measure of the taxpayer resources committed, and because of concerns about the accuracy of the methods and assumptions that DOE uses to forecast default rates and recovery values, some commentators have suggested that federal loan guarantees for the construction of nuclear power plants are being systematically underpriced, whereas others believe they are being overpriced. For this study, the Congressional Budget Office (CBO) reviewed the many factors that can influence the cost to the government of guaranteeing loans for the construction of advanced nuclear facilities; developed a model to estimate guarantee costs for a representative loan using both FCRA-based and fair-value methodologies; performed a sensitivity analysis of those estimated costs to changes in assumptions about key drivers of cost; and explored the challenges inherent in attempting to charge borrowers the full cost of a loan guarantee. CBO's findings are as follows: The expected cost to the federal government of guaranteeing a nuclear construction loan will vary greatly depending on a project's characteristics and on the economic and regulatory environment in which the project will operate. Important considerations include capital structure (the mix of debt and equity used to finance the project); ownership structure (whether it is a stand-alone project or part of a diversified company); whether construction costs may be passed on to utility ratepayers or local taxpayers; the regulatory environment; the degree of uncertainty about construction costs; the cost of competing generation technologies; and the demand for electricity. Although a serious nuclear accident could entail extremely large costs to investors and society, that risk has a small effect on the direct cost to the government of providing a guarantee because liability under the guarantee is limited to the amount of the debt, and the probability that such an accident will occur is low. Default rates and recovery rates are likely to vary considerably, both across projects and over the lifetime of a given project. CBO does not have enough information to independently estimate an average recovery rate for nuclear construction loans. However, assigning a similar expected recovery rate as a starting point for all projects—which is DOE's current practice—does not appear to make full use of the information available to DOE through its detailed project assessment process. For example, when sponsors of stand-alone projects cannot pass on construction costs to rate-payers, very low recoveries may result if bankruptcy occurs during the construction phase. By contrast, recovery rates may be considerably higher once projects become operational. Using a single recovery rate tends to increase the variability of estimated guarantee costs relative to their true values, which increases the government's exposure to a phenomenon known as adverse selection. Adverse selection occurs when borrowers are better able than the government to assess the value of a guarantee offer and take advantage of their superior information at the government's expense. For nuclear construction loans, borrowers will tend to turn down a guarantee if they believe the fee set by DOE is too high but go forward if they consider it fair or underpriced, which increases the likelihood that DOE's portfolio will include more projects for which the subsidy fee has been underestimated than overestimated. When credit ratings are used to assess default probabilities, cost estimates will vary widely with the assigned ratings category, the assumed recovery rate, and whether Treasury interest rates or estimated market interest rates are used for discounting. CBO relied on the information in historical credit ratings to impute default probabilities (as does DOE) and considered a range of recovery rates that might apply to different projects depending on their characteristics. As required under FCRA, budgetary estimates use Treasury interest rates for discounting future cash flows; fair-value estimates rely on estimates of the applicable market interest rates for discounting. Budgetary estimates of guarantee costs are significantly lower than the corresponding fair-value estimates, which provide a more comprehensive measure of the cost to taxpayers. CBO used the credit rating associated with a project to derive the discount rate the market would most likely assign to the loan cash flows. For example, if the risks associated with a guaranteed loan are in the range of those posed by bonds rated A (less risky) and bonds rated BB (riskier), and if 55 percent of the amount owed is expected to be recovered in the event of a default, the budgetary cost, measured on a FCRA basis, ranges from 1 percent to 6 percent of the principal loaned. In contrast, the fair value of the guarantee ranges from 9 percent to 21 percent of the principal loaned. Because of the high degree of uncertainty involved, it may not be possible to charge borrowers the full cost of a loan guarantee. When adverse selection is severe, attempts to offset expected lo**sses with an increase in fees can backfire because the higher fees drive away creditworthy borrowers**, **making it impossible to provide a loan guarantee that does not involve a subsidy.** CBO relied on a credit-ratings-based approach to evaluate the probability of default rather than on the historical experience of the nuclear industry, for which not enough data exist to draw quantitative inferences. However, historical experience suggests that investing in nuclear generating capacity engenders considerable risk. One study found that of the 117 privately owned plants in the United States that were started in the 1960s and 1970s and for which data were available, 48 were canceled, and almost all of them experienced significant cost overruns. As a consequence, most of the utilities that undertook nuclear projects suffered ratings downgrades—sometimes several downgrades—during the construction phase.

### Diminishing CP

#### Uncertainty destroys investment

**Whitefield, 11** [5/4/11, STATEMENT OF THE HONORABLE ED WHITFIELD CHAIRMAN, SUBCOMMITTEE ON ENERGY AND POWER, “The Role of the Nuclear Regulatory Commission in America’s Energy Future, http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/050411/Whitfield.pdf

While the NRC may not be the direct cause of this uncertainty – the Obama Administration’s policy is - the NRC’s actions will contribute to the uncertainty one way or another. Beyond open adjudicatory issues, the NRC has recently taken administrative action to close down its review of Yucca Mountain, which will deprive the public of the first independent government assessment of the merits of Yucca Mountain’s construction. That doesn’t bode well for a nuclear renaissance. On the front end of nuclear power development, I’m very interested to hear about whether the NRC can develop and provide more regulatory certainty in its licensing and re-licensing programs. As in other energy sectors, regulatory certainty, such as keeping to decision schedules, is essential for ensuring the investments necessary to develop nuclear energy. Additionally, I think it is worth reviewing the Commission’s organizational structure, and whether an agency rightly focused on safety is suitably structured to also facilitate the advancement of new nuclear generation. And connected with regulatory certainty, are clear and well developed safety engineering evaluations. As mentioned, the safety record of NRC is unparalleled. But recent events in Japan have raised questions in the public’s mind about how well the NRC does its job. We need to be confident the NRC is up to the task. I believe the agency is, but scrutiny is helpful to maintain the public trust. We do not want to overreact to events based on poor and faulty information or other political agendas. Nuclear power is critical to this nation. We should recognize its importance for a growing economy and not lose sight of the tremendous value a reliable, affordable power supply will mean for the future health and wealth of the United States.

#### Certainty is super

**Jamal, 12** [March, Renewables and Nuclear: Different Signals from Germany and Britain, [Carbon Clear Blog](http://carbonclear.blogspot.com/)

Carbon management consultants, emission reductions, carbon footprints and carbon offsets. Expert advice for a low-carbon future.

<http://carbonclear.blogspot.com/2012/03/renewable-energy-will-britain-surrender.html>]

On 11 March, one year on from the [Fukushima Daiichi nuclear reactor](http://en.wikipedia.org/wiki/Fukushima_Daiichi_nuclear_disaster) meltdown in Japan, [Germany has reaffirmed its decision](http://www.nytimes.com/2012/03/13/world/europe/merkel-offers-defense-of-her-policy-on-energy.html) to abandon nuclear power. The Germans shut down their eight oldest reactors shortly after the Japanese earthquake, tsunami and reactor core breach, and pledged to shut the remaining reactors by 2022. In the short term, this has meant an increase in greenhouse gas emissions from fossil fuel power stations in Germany and neighboring countries. Over the longer term, however, Germany's leaders want to replace the country's nuclear output with renewables. Critics doubt the nation's electric grid can transport power from new renewable energy generators to power-hungry factories hundreds of miles away, but the initiative has the support of 76% of the public and Chancellor Angela Merkel has pledged to redouble her government's efforts. The very next day, the Guardian newspaper reported that [the British government wants to](http://www.guardian.co.uk/environment/2012/mar/11/uk-renewable-energy-target-nuclear-power?INTCMP=SRCH) reduce the relative priority given to renewables over nuclear. The Guardian reports that the UK has proposed to the European commission that explicit renewable energy targets for 2030 be dropped in favour of targets for "low carbon power". This label would allow countries to choose whether they wish to reach climate change - related power targets with renewables, nuclear power, carbon capture and storage or a combination of the three. While this change doesn't necessarily mean the British government would back away from its support of renewables, it leaves the door open for such a move. In fact, this policy pressure would not make sense otherwise. Just the possibility could have a chilling effect on investment in renewables in the UK. Most renewable energy technologies are characterized by high capital costs and low operational costs. The cost of renewables-based electricity can be cost-competitive or even superior to that from fossil fuels, but only when those up-front costs and long-term savings are averaged over many years. Without certainty that government will maintain its support for years or decades, investors are less likely to provide the millions, or even billions of pounds required to bring renewables to market on a large scale. Nuclear power generates significantly lower carbon emissions than fossil fuel fired power stations and - despite Fukushima - it is a proven technology with a global track record. However, it is by no means certain that the government will be able to overcome long-term opposition to nuclear power and nuclear waste in time to ensure that nuclear can play a significant role in Britain's lower-carbon future.

#### Turn - Bubble key to avert depression

**Janzen 2k8** [http://www.harpers.org/archive/2008/02/0081908, “next bubble: Priming the markets for tomorrow's big crash” By Eric Janszen, Angel investor and iTulip.com founder]

The next bubble must be large enough to recover the losses from the housing bubble collapse. How bad will it be? Some rough calculations7: the gross market value of all enterprises needed to develop hydroelectric power, geothermal energy, nuclear energy, wind farms, solar power, and hydrogen-powered fuel-cell technology—and the infrastructure to support it—is somewhere between $2 trillion and $4 trillion. The assuming the bubble can get started, the hyperinflated fictitious value could add another $12 trillion. In a hyperinflation, infrastructure upgrades will accelerate, with plenty of opportunity for big government contractors fleeing the declining market in Iraq. Thus, we can expect to see the creation of another $8 trillion in fictitious value, which gives us an estimate of $20 trillion in speculative wealth, money that inevitably will be employed to increase share prices rather than to deliver “energy security.” When the bubble finally bursts, we will be left to mop up after yet another devastated industry. FIRE, meanwhile, will already be engineering its next opportunity. **Given the current state of our economy, the only thing worse than a new bubble would be its absence.**

#### No green bubble and it doesn’t apply to nuclear

**Hamilton 12** [Clean Break, Tyler Hamilton is editor-in-chief of Corporate Knights magazine and a business columnist for the Toronto Star, “Clean energy technologies? No bubble bursting there. Future is growth, growth, growth”, 8/6/2012]

That usually means cleaning it up, making it smarter and more reliable, and investing in clean technologies — from Canada, perhaps — that make it more robust and efficient.¶ There are some commentators out there who like to point to very specific events as evidence that the clean energy and technology boom has gone bust. They point to the exaggerated Solyndra “scandal,” which saw the bankruptcy of the solar manufacturing start-up after it received — and had already burned through — funding that was secured via a $535 million (U.S.) loan guarantee from the U.S. Department of Energy.¶ It makes for great politics, but the reality is that companies do sometimes fail and the public does often have flesh in the game. It’s not unique to clean energy. The loan guarantee program, after all, was designed for high-risk bets. Looked at objectively, the program has actually outperformed expectations. Solyndra and a handful of others are falling stars in a galaxy of promise.¶ But Solyndra is just the start. Clean energy skeptics point to company closures and the collapse of many solar, wind and other cleantech-themed stocks. They cite how U.S. government stimulus spending for clean energy projects is coming to an end. They flag how several jurisdictions in Europe, which is dealing with unrelated economic problems, are reducing subsidies for renewable energy projects.¶ The green dream is dead — or dying. It’s the message you get when listening to those, mostly living in a North American bubble, who doubted the vision in the first place.¶ This cacophony ignores the incredible needs of countries like India, which is already among the top spenders in the world on clean-energy projects, having spent $10.2 billion on renewable energy in 2011. As the blackout suggests, the need to accelerate that spending has grown more urgent.¶ Japan, meanwhile, is embracing renewable energy in a big way in the aftermath of the nuclear disaster at Fukushima. It just launched its own feed-in-tariff program —similar to the one in Ontario —aimed at aggressively spurring solar, wind and geothermal development to help reduce the country’s dependence on nuclear power.¶ Bloomberg New Energy Finance reported this month that global investment in clean energy surged to $57 billion in the second quarter of 2012, up 24 per cent from the first quarter and carried largely by a stunning 92 per cent spending increase out of China. Investment is still down year-over- year —2011 wasn’t a great year generally, right? —but it’s on the upswing in 2012, hardly the sign of collapse.¶ That boost from China is expected to continue, particularly in solar. As part of its 12th five-year economic plan, released in 2011, China originally expected to increase solar installations 20-fold by 2020. Last month it decided to draw forward that target to 2015, when it hopes to have 21 gigawatts of solar power capacity in place —enough to supply all of Ontario on a sunny spring day.¶ Why is China moving in this direction? Economically, it carries long-term strategic importance. But China’s citizens are also growing fed up with unbearable air, water and soil pollution, so much so that there is a rise in violent protests breaking out across the country.¶ The reason why clean energy isn’t a fad or a bursting bubble is that global problems such as climate change, pollution, poverty, food scarcity, crumbling legacy infrastructure, and access to clean water aren’t going away anytime soon. Renewable energy and other clean technologies may not be the only solution, but they are a big and growing part of it.¶ Will nuclear help out? Maybe, but don’t count on it. Jeff Immelt, chief executive of General Electric, a big supplier of nuclear technology, told the Financial Times this week that it’s “really hard” these days to justify the cost of nuclear. “I think some combination of gas, and either wind or solar … that’s where we see most countries around the world going.”¶ Ontario may want to reconsider plans for new nukes at Darlington.¶ Fact is, renewable energy costs are falling fast, and that’s part of the reason there are layoffs, profit warnings, bankruptcies and falling share prices in the industry. Subsidies are supposed to gradually fade away, something the fossil fuel industry hasn’t learned after 100 years of handouts.¶ There was oversupply in clean energy equipment. Weak companies are struggling and some are failing. Those intent on surviving figure out how to innovate, adjust, enter new geographic markets and come out stronger – the cycle is not unique to clean energy.¶ “Any emerging market will experience growth problems and will have winners and losers. And the losers’ problems do not necessarily indicate the absence of a long-term market,” says Craig Tighe, a partner with global law firm DLA Piper. “Were that the case, the loss of Palm and Handspring would mean that the smart phone market is not sustainable, which is manifestly not the case.”¶ Growth in clean energy is happening. What’s changing is the pace of that growth and the players who get to benefit.¶ There’s no bubble bursting here.

#### No green bubble

Hamilton, 8/6/12 -- an energy reporter and business columnist for the Toronto Star, Canada’s largest daily newspaper (Tyler, *Clean energy technologies? No bubble bursting there. Future is growth, growth, growth*, http://www.cleanbreak.ca/2012/08/06/clean-energy-technologies-no-bubble-bursting-there-future-is-growth-growth-growth/)

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The reason why clean energy isn’t a fad or a bursting bubble is that global problems such as climate change, pollution, poverty, food scarcity, crumbling legacy infrastructure, and access to clean water aren’t going away anytime soon. Renewable energy and other clean technologies may not be the only solution, but they are a big and growing part of it.

### States CP – Harvard

#### B. Credit rating

**Sullivan and Walsh, 8 -** Mary Anne Sullivan, partner in Hogan & Hartson's energy practice, has more than 25 years of experience as an energy lawyer. She previously served as general counsel of the U.S. Department of Energy and as deputy general counsel for environment and nuclear programs. Sam Walsh is an associate at Hogan & Hartson (“Federal Loan Guarantees,” Electric Light and Power, Mar/April, ABI Inform)

In their rulemaking comments, Wall Street firms emphasized that a loan guarantee must represent the unconditional commitment of the full faith and credit of the United States if the program is to succeed in attracting affordable private investment to innovative technologies. The final rule seems to have calmed concerns that the guarantees might be conditioned in a way that would preclude the "AAA" rating for the federally guaranteed debt that the program was designed to assure. The guarantees will be absolute, absent fraud or material misrepresentation by the holder of a guaranteed obligation.

### Elections

#### Romney will win –

#### Polling and independent voters

**Cohen, 10/25**/12 (Jon, “Post-ABC tracking poll: Romney 50 percent, Obama 47” Washington Post,

<http://www.washingtonpost.com/blogs/the-fix/wp/2012/10/25/post-abc-tracking-poll-romney-50-percent-obama-47/>

¶ Republican Mitt Romney has edged ahead of President Obama in the new Washington Post-ABC News national tracking poll, with the challenger winning 50 percent of likely voters for the first time in the campaign.¶ As Romney hits 50, the president stands at 47 percent, his lowest tally in Post-ABC polling since before the national party conventions. A three-point edge gives Romney his first apparent advantage in the national popular vote, but it is not one that is statistically significant with a conventional level of 95 percent confidence.¶ Results from the tracking poll were first released Monday evening, and had Obama at 49 percent, and Romney at 48. On Tuesday and Wednesday, the results were flipped, with Romney at 49 and the president at 48. All of the results are among likely voters.¶ However, Romney does now boast a statistically — and substantively — important lead on the economy, which has long been the central issue of the race. When it comes to handling the nation’s struggling economy, 52 percent of likely voters say they trust Romney more, while 43 percent say they have more faith in the president.¶ And just as the challenger has leaped ahead on this score, he has effectively neutralized what has been a consistent fall-back for Obama: economic empathy. In the new poll, 48 percent say Obama is more in tune with the economic problems people are having, and nearly as many, 46 percent, say Romney is the one who is more in touch. Just two weeks ago, Obama had a nine-point lead on the question.¶ The two candidates also run about evenly on the question of handling “international affairs,” little difference from where they were heading into Monday’s debate on foreign policy.¶ Romney’s improvements on the economy — and on empathizing with the plight of those struggling financially — has been fueled by gains among political independents. Independents now side with Romney by campaign highs on both the economy (61 to 34 percent) and on understanding people’s problems (52 to 42 percent).¶ These advantages with independents undergird a sizable, 19 percentage-point Romney lead over Obama on the horse race. Should that advantage stick, it would be the sharpest tilt among independents in a presidential election since Ronald Reagan’s 1984 landslide win. (Reagan won independent and other unaffiliated voters 63 to 36 percent, according to the exit poll). Obama won them by eight in 2008.

#### Huge laundy list of nuclear incentives and construction now

**Johnson ’12** (US Campaign Trail: is nuclear in the equation? By John Johnson on Apr 25, 2012, nuclear energy expert and analyst, Nuclear Energy Insider, Nuclear Business Intelligence <http://analysis.nuclearenergyinsider.com/new-build/us-campaign-trail-nuclear-equation>

Just the same, the Obama Administration is considered a nuclear supporter, having made several moves to help jumpstart America’s nuclear energy industry. Obama plugged nuclear power during his first State Of The Union speech several years ago, and has generally been upbeat about the energy source’s future in the U.S. The Campaign Obama, a Democrat, will face Mitt Romney in the November election. Romney is expected to be named the official Republican nominee in August. While Romney has not taken a stance on nuclear energy during his campaign, the Obama administration has made significant investments in the sector, including a $450m budget request in March intended to advance the development of American-made small modular reactors (SMRs). Congress still needs to approve the authorization for funding. The SMRs are expected to be ready for commercial use within 10 years, and are intended for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes. “The Obama Administration and the Energy Department are committed to an all-of-the-above energy strategy that develops every source of American energy, including nuclear power, and strengthens our competitive edge in the global clean energy race,” U.S. Energy Secretary Steven Chu said when the program was announced. “Through the funding for small modular nuclear reactors, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.” John Keeley, manager of media relations for the Nuclear Energy Institute, said that the Obama administration has done what it can to support the deployment on new build-outs in the United States to build out nuclear, as well as supporting research and development efforts, such as those in the small reactor space. Research support In addition, the U.S. has invested $170 million in research grants at more than 70 universities, supporting research and development into a full spectrum of technologies, from advanced reactor concepts to enhanced safety design. “The President was explicit in his State Of The Union speech about the virtues of nuclear as a technology and its role in clean air generation,” said Keeley. “And he has been supportive of developing more nuclear plants in this country. Those initiatives have to be identified as significant evidence of support for the nuclear sector.” There are currently 104 nuclear power reactors operating in the U.S. in 31 states, operated by 30 different utilities. There are four new nuclear reactors being built in the U.S., including two in George at total expected cost of $14bn. In another sign of the U.S support for the industry, the federal government provided utility company Southern with an $8.3bn loan guarantee for the Vogtle Units 3 and 4, the first new nuclear plants to be built in the U.S. in the last 30 years. They are expected to be operational in 2016 and 2017. The U.S. Energy Department has also supported the Vogtle project and the development of the next generation of nuclear reactors by providing more than $200m through a cost-share agreement to support the licensing reviews for the Westinghouse AP1000 reactor design certification. In addition to the Vogtle plants, SCANA, a subsidiary of South Carolina Electric & Gas Co. plans to add two reactors to its nuclear power plant near Jenkinsville, S.C., by 2016 and 2019.

#### Frankenstorm thumps – crushes Democratic turnout

**Walsh, 10/26/12** (Paul, “Will 'Frankenstorm' Impact the 2012 Presidential Election?” http://www.cnbc.com/id/49569527)

As we enter the final days of the 2012 race, with each campaign raising and spending an unprecedented amount of money, the final call on who wins or loses may come down to something as simple as the weather on Election Day.¶ It turns out that when it comes to turnout, the weather is important. Really important.¶ The Weather Channel has partnered with Ipsos to get a read on how the weather would influence voter turnout.¶ And here’s the headline: 35% of undecided voters say bad weather will impact their decision to head to the polls.¶ The risk from Hurricane Sandy is indirectly related to the actual storm; rather it’s a function of four things, most of them bad for President Obama and Governor Romney:¶ Momentum loss due to the media distraction during the lead-up to the storm¶ Recovery efforts in key states like Virginia, Pennsylvania, Ohio and New Hampshire¶ Voter turn-out issues from areas experiencing wide-spread power outages. This could include large portions of Virginia, Pennsylvania and New Hampshire.¶ Controversy following a close election related to voter turnout affected by the storm¶ Here are some other key findings from The Weather Channel/Ipsos:¶ Already-decided voters are more certain they’ll vote, regardless of the weather. Among those who plan to vote and know which candidate they’ll vote for, 19 percent say bad weather will impact whether they make it to the polls, as compared to 35 percent of undecided voters¶ In bad weather, Mitt Romney’s supporters are more likely to vote. Among registered voters, 28 percent who support President Barack Obama are likely to say that bad weather would have a “significant or moderate impact” on their getting to the polls versus 19 percent of Gov. Romney’s supporters

#### Nuclear power doesn’t swing the election -- identical positions mean it won’t get drawn into the debate.

**Wood, 9-13-12**

[Elisa, AOL, “What Obama and Romney Don't Say About Energy,” http://energy.aol.com/2012/09/13/what-obama-and-romney-dont-say-about-energy/]

Fossil fuels and renewable energy have become touchy topics in this election, with challenger Mitt Romney painting President Barack Obama as too hard on the first and too fanciful about the second – and Obama saying Romney is out of touch with energy's future. But two other significant resources, nuclear power and energy efficiency, are evoking scant debate. What gives? Nuclear energy supplies about 20 percent of US electricity, and just 18 months ago dominated the news because of Japan's Fukushima Daiichi disaster – yet neither candidate has said much about it so far on the campaign trail. Romney mentioned nuclear power only seven times in his recently released white paper, while he brought up oil 150 times. Even wind power did better with 10 mentions. He pushes for less regulatory obstruction of new nuclear plants, but says the same about other forms of energy. Obama's campaign website highlights the grants made by his administration to 70 universities for research into nuclear reactor design and safety. But while it is easy to find his ideas on wind, solar, coal, natural gas and oil, it takes a few more clicks to get to nuclear energy. The Nuclear Energy Institute declined to discuss the candidates' positions pre-election. However, NEI's summer newsletter said that both "Obama and Romney support the use of nuclear energy and the development of new reactors."

#### Plan happens after the election

Ramsey Cox (writer for The Hill) September 24, 2012 “Congress to hold pro forma sessions until November” http://thehill.com/blogs/floor-action/senate/251313-congress-to-hold-pro-forma-sessions-until-november

Rather than being in recess for more than five weeks, both the Senate and the House decided to hold pro forma sessions until after the November elections. Both chambers will gavel in Tuesday morning for a brief session; typically, legislative business doesn't take place in pro forma sessions. At most members ask to be recognized for a speech, but rarely do. It is unclear if the legislative branch was afraid of recess appointments by the White House, yet both sides took a formal recess in August. The Senate will hold a pro forma session every Tuesday and Friday until Nov. 13 at 2 p.m. when they’ll continue work on S. 3525, the Sportsmen Act, which would increase access to federal land for hunters and fishers while also supporting conservation measures.

**Nuclear power popular**

Brown ’12 (Dave Brown — Exclusive to Uranium Investing News, “United States Still Favors Nuclear Power”, <http://uraniuminvestingnews.com/11008/united-states-still-favors-nuclear-power.html>, March 28, 2012, LEQ)

According to the results of Gallup’s annual Environment survey, conducted earlier this month, the majority of Americans continue to favor nuclear energy as a source of electricity for the United States. The survey indicated that 57 percent of participants were in favor of nuclear power this year, the same amount as in 1994, the first year for the survey. This year’s results also demonstrate an equal level of support among participants as last year, just prior to the Japanese earthquake and tsunami. Support for the nuclear industry as measured by the survey has ranged from a low of 46 percent in 2001 to a high of 62 percent in 2010. These results are of significance to investors as the US is the largest consumer of uranium in the world, with 104 operational nuclear reactors. Continued public support and confidence from the country should guide future political decisions and foster economic interest in domestic and international uranium resources as well as in nuclear industry stakeholders.

#### Romney will rig the election

**Barrett 10/21** – Ph.D. Arabist-Islamologist, political analyst for PressTV

(Kevin, “Election fraud storm-clouds loom over US presidential race”, <http://www.presstv.ir/detail/2012/10/21/267897/romney-fraud-looms-in-us-election/>, dml)

Despite the thunderous silence of the media, all signs are pointing towards another neocon-Republican election theft attempt, like the successful ones of 2000 and 2004. ¶ One warning sign: The appearance of blatantly fraudulent public opinion polls giving Romney a substantial lead over Obama. While all other polls show that Obama has enough of an edge in the swing states to constitute an electoral-college “firewall,” Gallup’s national polls -- using a “likely voter” model that apparently posits an inverse correlation between voting and skin pigmentation -- currently give Romney an edge of more than five points in the popular vote. ¶ Why would the Republicans falsify a prominent national poll? To give Romney “momentum,” and create the illusion of plausibility when rigged voting machines hand him a “surprise victory.” ¶ But why just one poll? Because it’s doable. Rigging ALL the polls is a herculean task, even for a party backed by the world’s biggest crime syndicate. ¶ Is there any evidence that Romney will try to steal the swing states he needs to capture the White House? Unfortunately, yes.¶ Believe it or not, Romney actually OWNS the black-box voting machines that will fabricate -- not count -- the votes in Ohio, the most important swing state. (“Black box” machines are designed with no transparent link between the votes that go in, and the “results” that come out.)¶ As my recent radio guest Bob Fitrakis and two co-authors explain in their article Does the Romney Family Now Own Your e-Vote? ¶ Will you cast your vote this fall on a faulty electronic machine that’s partly owned by the Romney Family? Will that machine decide whether Romney will then inherit the White House? ¶ Through a closely held equity fund called Solamere, Mitt Romney and his wife, son and brother are major investors in an investment firm called H.I.G. Capital. H.I.G. in turn holds a majority share and three out of five board members in Hart Intercivic, a company that owns the notoriously faulty electronic voting machines that will count the ballots in swing state Ohio November 7. Hart machines will also be used elsewhere in the United States. ¶ In other words, a candidate for the presidency of the United States, and his brother, wife and son, have a straight-line financial interest in the voting machines that could decide this fall’s election. These machines cannot be monitored by the public. But they will help decide who “owns” the White House. ¶ They are especially crucial in Ohio, without which no Republican candidate has ever won the White House. In 2004, in the dead of election night, an electronic swing of more than 300,000 votes switched Ohio from the John Kerry column to George W. Bush, giving him a second term. A virtual statistical impossibility, the 6-plus% shift occurred between 12:20 and 2am election night as votes were being tallied by a GOP-controlled information technology firm on servers in a basement in Chattanooga, Tennessee… (Read the complete article here.)

#### Too late to change the election- ideology

Helling ’12 (DAVE HELLING, McClatchy Newspapers Miami Herald 7-22-12 "Is the race for president already over?"

But **a growing number** of **political scientists and campaign consultants** - backed by the **latest polling data** - think the daily campaign back-and-forth **is having no significant effect on voters.** Most Americans have **locked in** their presidential decisions, polls released Thursday suggested, and the already small number of persuadable voters **shrinks by the hour**. Put another way: America could vote for president next week, and the outcome would probably be the same as it will be in November. "That's accurate, barring some really big, big event or change in the political environment," said Alan Abramowitz, a political science professor at Emory University in Atlanta, who has studied presidential voting patterns. Kenneth Warren, a political science professor at St. Louis University, agreed. "Most people have decided who they're going to vote for early on," he said. Recent polls show those who have decided are split almost evenly between Obama and Romney. In a CBS/New York Times poll, Romney led by 1 point. In a Fox News poll, he trailed Obama by 4 points. A National Public Radio poll found Obama leading by 2 points. A Gallup tracking poll over the same time period showed the race dead even. The average of polls puts the Obama advantage at 1.2 percent, according to Real Clear Politics, a political aggregation website. The incumbent has led Romney in that average by a one- to two-point margin since last October. Political scientists and consultants said there were several reasons for early presidential decision-making. In an Internet-cable-TV age, **voters are pounded with political messages daily, helping them make up their minds far in advance** of the election. An incumbent in the race makes at least one of the candidates a known quantity. And American **voters are deeply divided, further cementing their choices.**

#### Winners win elections- the plan is key to Obama’s momentum

Creamer, 11 – political strategist for over four decades

(Robert, he and his firm, Democracy Partners, work with many of the country’s most significant issue campaigns, one of the major architects and organizers of the successful campaign to defeat the privatization of Social Security, he has been a consultant to the campaigns to end the war in Iraq, pass health care, pass Wall Street reform, he has also worked on hundreds of electoral campaigns at the local, state and national level, "Why GOP Collapse on the Payroll Tax Could be a Turning Point Moment," Huffington Post, 12-23-11, www.huffingtonpost.com/robert-creamer/why-gop-collapse-on-the-p\_b\_1167491.html, accessed 9-1-12, mss)

2). Strength and victory are **enormous political assets.** Going into the New Year, they now belong to the President and the Democrats. One of the reasons why the debt ceiling battle inflicted political damage on President Obama is that it made him appear ineffectual - a powerful figure who had been ensnared and held hostage by the Lilliputian pettiness of hundreds of swarming Tea Party ideological zealots. In the last few months -- as he campaigned for the American Jobs Act -- he has shaken free of those bonds. Now voters have just watched James Bond or Indiana Jones escape and turn the tables on his adversary. Great stories are about a protagonist who meets and overcomes a challenge and is victorious. The capitulation of the House Tea Party Republicans is so important because it feels like the beginning of that kind of heroic narrative. Even today most Americans believe that George Bush and the big Wall Street Banks - not by President Obama -- caused the economic crisis. Swing voters have never lost their fondness for the President and don't doubt his sincerity. But they had begun to doubt his effectiveness. They have had increasing doubts that Obama was up to the challenge of leading them back to economic prosperity. The narrative set in motion by the events of the last several weeks could be a turning point in voter perception. It could well begin to convince skeptical voters that Obama is precisely the kind of leader they thought he was back in 2008 - a guy with the ability to lead them out of adversity - a leader with the strength, patience, skill, will and resoluteness to lead them to victory. That now contrasts with the sheer political incompetence of the House Republican Leadership that allowed themselves to be cornered and now find themselves in political disarray. And it certainly contrasts with the political circus we have been watching in the Republican Presidential primary campaign. 3). This victory will inspire the dispirited Democratic base. Inspiration is the feeling of empowerment - the feeling that you are part of something larger than yourself and can personally play a significant role in achieving that goal. It comes from feeling that together you can overcome challenges and win. Nothing will do more to inspire committed Democrats than the sight of their leader -- President Obama - out maneuvering the House Republicans and forcing them into complete capitulation. The events of the last several weeks will send a jolt of electricity through the Progressive community. The right is counting on Progressives to be demoralized and dispirited in the coming election. The President's victory on the payroll tax and unemployment will make it ever more likely that they will be wrong. 4). When you have them on the run, that's the time to chase them. The most important thing about the outcome of the battle over the payroll tax and unemployment is that it shifts the political momentum at a critical time. Momentum is an independent variable in any competitive activity - including politics. In a football or basketball game you can feel the momentum shift. The tide of battle is all about momentum. The same is true in politics. And in politics it is even more important because the "spectators" are also the players - the voters. **People** follow - and **vote -- for winners**. The bandwagon effect is enormously important in political decision-making. Human beings like to travel in packs. They like to be at the center of the mainstream. Momentum shifts affect their perceptions of the mainstream. For the last two years, the right wing has been on the offensive. Its Tea Party shock troops took the battle to Democratic Members of Congress. In the Mid-Terms Democrats were routed in district after district. Now the tide has turned. And when the tide turns -when you have them on the run - that's the time to chase them.

#### Energy won’t switch votes

**Farnam, 12** (T.W. Washington Post, Energy ads flood TV in swing states, 6/27, <http://www.washingtonpost.com/politics/energy-ads/2012/06/27/gJQAD5MR7V_story.html>)

Energy issues don’t spark much excitement among voters, ranking below health care, education and the federal budget deficit — not to mention jobs and the economy.

And yet those same voters are being flooded this year with campaign ads on energy policy. Particularly in presidential swing states, the airwaves are laden with messages boosting oil drilling and natural gas and hammering President Obama for his support of green energy. The Cleveland area alone has heard $2.7 million in energy-related ads.

The disconnect between what voters say they care about and what they’re seeing on TV lies in the money behind the ads, much of it coming from oil and gas interests. Those funders get the double benefit of attacking Obama at the same time they are promoting their industry.

Democrats also have spent millions on the subject, defending the president’s record and tying Republican candidate Mitt Romney to “Big Oil.”

Overall, more than $41 million, about one in four of the dollars spent on broadcast advertising in the presidential campaign, has gone to ads mentioning energy, more than a host of other subjects and just as much as health care, according to ad-tracking firm Kantar Media/Cmag.

In an election focused heavily on jobs and the economy, all of this attention to energy seems a bit off topic. But the stakes are high for energy producers and environmentalists, who are squared off over how much the government should regulate the industry. And attention has been heightened by a recent boom in production using new technologies such as fracking and horizontal drilling, as well as a spike in gas prices this spring just as the general election got underway.

When asked whether energy is important, more than half of voters say yes, according to recent polls. But asked to rank their top issues, fewer than 1 percent mention energy.

#### No impact – Romney will copy Obama on foreign policy

Aaron David Miller, 5-23-2012; distinguished scholar at the Woodrow Wilson International Center for Scholars; Barack O'Romney http://www.foreignpolicy.com/articles/2012/05/23/barack\_oromney

And that brings up an extraordinary fact. What has emerged in the second decade after 9/11 is a remarkable consensus among Democrats and Republicans on a core approach to the nation's foreign policy. It's certainly not a perfect alignment. But rarely since the end of the Cold War has there been this level of consensus. Indeed, while Americans may be divided, polarized and dysfunctional about issues closer to home, we are really quite united in how we see the world and what we should do about it. Ever wondered why foreign policy hasn't figured all that prominently in the 2012 election campaign? Sure, the country is focused on the economy and domestic priorities. And yes, Obama has so far avoided the kind of foreign-policy disasters that would give the Republicans easy free shots. But there's more to it than that: Romney has had a hard time identifying Obama's foreign-policy vulnerabilities because there's just not that much difference between the two. A post 9/11 consensus is emerging that has bridged the ideological divide of the Bush 43 years. And it's going to be pretty durable. Paradoxically, both George W. Bush's successes and failures helped to create this new consensus. His tough and largely successful approach to counterterrorism -- specifically, keeping the homeland safe and keeping al Qaeda and its affiliates at bay through use of special forces, drone attacks, aggressive use of intelligence, and more effective cooperation among agencies now forms a virtually unassailable bipartisan consensus. As shown through his stepped-up drone campaign, Barack Obama has become George W. Bush on steroids. And Bush 43's failed policies -- a discretionary war in Iraq and a mismanaged one in Afghanistan -- have had an equally profound effect. These adventures created a counter-reaction against ill-advised military campaigns that is now bipartisan theology as well. To be sure, there are some differences between Romney and Obama. But with the exception of Republicans taking a softer line on Israel and a tougher one on Russia -- both stances that are unlikely to matter much in terms of actual policy implementation -- there's a much greater convergence.

#### Never gonna give him up, never gonna let him down

Neil Munro 8-30-2011; Daily Caller “Obama still has green energy vote for 2012” <http://dailycaller.com/2011/08/30/obama-still-has-green-energy-vote-for-2012/>

Environmentalists are staging a two-week oil-pipeline protest outside the White House to boost their importance to President Barack Obama’s political calculations in the 2012 election season. But there’s little evidence so far that progressives’ disappointment with Obama’s environmental policies threatens to reduce their turnout on election day, or that it pressures White House officials to make additional concessions to environmentalists during a political season dominated by the public’s demand for additional jobs. Monday’s colorful, TV-ready protests against the Keystone XL pipeline from Canada’s oil fields to U.S consumers took place in Lafayette Park, in front of the White House. The day’s events included 100 peaceful arrests of environmentalists and celebrities, a multi-faith spiritual event in Lafayette Park, press club speeches by environmental leaders, and numerous suggestions that approval of the pipeline by Obama will cost his campaign votes, volunteers and donations. Hundreds of others have already been arrested, and numerous environmental groups have contributed to two weeks of protest. If Obama approves the pipeline, environmental activist Andrew Driscoll predicted he would not vote to re-elect him. “He hasn’t done anything to earn our vote yet,” said the Massachusetts activist. “The fate of humanity, the fate of the planet” will be determined by Obama’s pipeline decision, he said. “If he approves it, it will be a huge blow, not only for our future, but also for this administration,” said Elijah Zarlin, a campaign manager at CREDO Action, an Atlanta-based progressive group. The protesters “are the people who are maybe going to vote for Obama, and are the people Barack will lose” if he approves the pipeline, he added. However, the leadership of the green movement isn’t threatening to break with Obama over this one decision. (RELATED: Gore: Global warming skeptics are this generation’s racists)

#### Romney not crazy on Russia

The Economist 9/1 (9/1/12, Romney Could Screw Up US Relations With Russia, <http://www.businessinsider.com/mitt-romneys-foreign-policy-chops-come-into-light-2012-9>, RBatra)

At the same time, the potential impact of a Romney presidency should not be exaggerated. Mr Romney is not an ideological politician, and he will have solid reasons to maintain a working relationship with Russia. These include reliance on Russian transit corridors to support US forces in Afghanistan to 2015 and beyond, Russia's veto in the UN Security Council, and its potential to act as interlocutor between the US and rogue states. Finally, there is a significant element of uncertainty that stems from the lack of clarity about what Mr Romney, who has often changed his position, actually stands for. In particular, the extent of the influence on him of several competing Republican foreign policy schools (neo-conservativism, populist isolationism, realism, liberal internationalism) is unclear.

#### Putin a/c

**Weiss 6-19** – Founder and Chief Executive Officer of Weiss Asset Management, a Boston-based investment firm,[[2]](http://en.wikipedia.org/wiki/Andrew_Weiss_%28economist%29#cite_note-time-1) and Professor Emeritus [Boston University](http://en.wikipedia.org/wiki/Boston_University) (Andrew, 2012, “[Putin's Waiting Game](http://www.foreignpolicy.com/articles/2012/06/19/waiting_game)” <http://www.foreignpolicy.com/articles/2012/06/19/waiting_game?page=full>) Jacome

The most important yet overlooked aspect of the current situation, however, may be the cynicism and casual indifference that Putin has displayed toward the U.S.-Russian relationship in the face of his much bigger problems at home. At the moment, Putin appears to be preoccupied by the political mess created by his decision to [switch jobs with Medvedev](http://www.nytimes.com/2012/05/09/world/europe/slight-hiccup-as-putin-and-medvedev-switch-jobs-in-russia.html) and the [badly flawed Duma elections](http://www.bbc.co.uk/news/world-europe-16042797) last December. He also must contend with the ripple effects of the eurozone drama and global economic slowdown, which together have contributed to a [20 percent decline](http://online.wsj.com/article/SB10001424052702303734204577467893480636270.html?mod=ITP_moneyandinvesting_3) in global oil prices over the past two months alone.

Against this backdrop, the ups and downs of relations with Washington may be little more than a distraction from the more urgent challenge of restoring the aura of invulnerability and bezal'ternativnost' (the lack of any alternative) that bolstered Putin's authority during his first 12 years in power. Already, he seems to have fallen back on the tried-and-true formula of portraying himself as the protector of a Fortress Russia beset by imaginary foreign enemies and spies.  This gambit has long helped the Kremlin cultivate support from average citizens and build up the regime's legitimacy.

The chief beneficiaries of Putin's rule -- the increasingly affluent and middle-class residents of places like Moscow -- show no signs of muffling their anger about his return to the Kremlin despite an ongoing crackdown on political dissent. Still, Putin knows how to cater to the two-thirds of the Russian electorate that voted for him in March and reside primarily in Russia's smaller cities and countryside. He may find it hard to resist the temptation to play upon their worst fears and anti-Western stereotypes. **Sacrificing the past several years of dramatic improvement in the U.S.-Russian relationship may seem like a small price to pay if it breathes new life and legitimacy into his rule.**

**Relations are impossible and won’t result in cooperation**

**LaFranchi, 3/3/12** [Christian Science Monitor, “A cold-war chill US-Russia relations falter over Libya and Syria”, http://www.csmonitor.com/USA/Foreign-Policy/2012/0303/A-cold-war-chill-US-Russia-relations-falter-over-Libya-and-Syria/%28page%29/2]

Secretary of State Hillary Rodham Clinton doffed her diplomatic gloves after Russia vetoed a United Nations Security Council resolution on Syria. Calling the February veto "despicable," she laid at Moscow's feet the "murders" of Syrian "women, children, [and] brave young men."

Not to be outdone, Russian Prime Minister Vladimir Putin railed against the United States for indulging its "bellicose itch" to get involved in other countries' internal affairs. And he vowed that Russia will thwart American designs in the Middle East.

Whatever happened to the "reset," President Obama's ballyhooed reorientation of US-Russia relations to a more cooperative path focused on common interests?

Russia would say Libya happened – the conflict where the West and the US in particular demonstrated a zeal for intervention that struck at Russia's sense of sovereignty and of what the UN should and shouldn't do. The US would say Syria happened – revealing Russia's revived obstructionist tendencies on the Security Council and demonstrating Russia's determination to protect an old ally at the expense of the Syrian people.

Both countries might say that what happened is this: The common interests that the "reset" was meant to emphasize – arms control, counterterrorism, the global economy – have taken a back seat to awakened geopolitical rivalries and diverging international visions.

Add to this the fact that Mr. Putin is expected to return to Russia's presidency in elections Sunday, bringing with him a blame-the-west perspective for explaining many of Russia's ills.

The result is that stormy days lie ahead for US-Russia relations, many say. Progress on issues like missile defense and NATO-Russia relations is likely to remain stalled – and could suffer serious setbacks if the Syria and Iran crises deteriorate further.

"I foresee a tough year for US-Russia relations," says Andrew Weiss, a former director for Russian affairs on the National Security Council under President Clinton who is now a Russia analyst at the RAND Corp. in Arlington, Va. With little prospect for advances, he adds, the Obama administration is likely to focus on preventing backsliding. "The emphasis will be on ensuring that these fast-moving conflicts don't put the remaining areas of cooperation at risk," he says.

Others say the current frictions demonstrate how relations, despite the efforts of three administrations, have never overcome cold-war mistrusts to progress to a deeper level.

"Under both Clinton and Bush, the US made it look like things were moving forward with Russia by focusing on things that were easier to do and that didn't require sacrifice from either side," says Paul Saunders, executive director of the Center for the National Interest in Washington.

Three years ago this month, President Obama said he **hoped to promote** more **cooperation** between the U.S. and Russia. It would be hard to see how that may happen as Vladimir Putin approaches power once again. Host Scott Simon speaks with the U.S. ambassador to Russia, Michael McFaul, about Sunday's elections in Russia.

#### Romney is a pragmatist – no risk of neocon-driven wars

Peter Foster 7-25-2012; Peter Foster is the Telegraph's US Editor based in Washington DC. He moved to America in January 2012 after three years based in Beijing, where he covered the rise of China. Before that, he was based in New Delhi as South Asia correspondent. He has reported for The Telegraph for more than a decade, covering two Olympic Games, 9/11 in New York, the 2004 Boxing Day tsunami, the post-conflict phases in Afghanistan and Iraq and the 2011 Fukushima disaster in Japan. “Mitt Romney wants to put the spine back into US foreign policy, but he's not a warrior. He’s a pragmatist” http://blogs.telegraph.co.uk/news/peterfoster/100172414/mitt-romney-wants-to-put-the-spine-back-into-us-foreign-policy-but-hes-not-a-warrior-hes-a-pragmatist/

The Obama campaign will try and cast this as a return to the ‘dark days of Dubya’ when crusading neo-cons waged righteous war after 9/11, leading the free world into a financially ruinous quagmire from which only now, Obama is finally managing to extract us. But we this doesn't ring true for two reasons: first, America is war-weary, and Romney knows it; there is no appetite for adventure right now and second, because ‘Dubya’ himself is nowhere to be seen during this campaign. He is conspicuously and deliberately absent. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. That is why Romney, for all his huffing and puffing about Obama and Afghanistan, is still planning to have the troops out by 2014. It is why when he talks about Iran, he talks about the iron application of sanctions and not unleashing the bunker-buster at first light. And also why there's no mention of designating China as a currency manipulator on day one of his presidency.

#### Romney would take the same approach to China as President Obama- wouldn’t start a trade war

**Politico, 9-15-12**, p. http://www.politico.com/news/stories/0912/81254.html

An actual Romney policy, many corporate executives believe, would have the same kind of focus on bringing cases before the World Trade Organization and negotiating behind closed doors — the same approach of Obama and George W. Bush.

“On his first day on the job, Romney is not going to put himself on the immediate defensive with the world’s second largest economy,” said one top financial industry executive who strongly supports Romney. The executive, like many others interviewed for this story, asked not to be identified by name so as not to jeopardize relations with a possible future president.

#### China won’t retaliate—no impact

Bosco 9/6—national security consultant, master of laws from Georgetown (Joseph A., 9/6/12, <http://www.washingtonpost.com/opinions/china-and-a-mitt-romney-presidency/2012/09/06/32917432-f76f-11e1-a93b-7185e3f88849_story.html>, RBatra)

First, it takes two to wage a “trade war.” When China realizes that Mr. Romney is serious about declaring it a currency manipulator (which it is), wiser counsel may well prevail in Beijing. Playing by international rules is far more in China’s interest than is retaliating against free and fair trade. China could avoid the choice between dangerous escalation and embarrassing submission by preemptively starting to free its currency before a Romney inauguration.

#### Romney is all talk- won’t actually crack down on China

NYT 12 (New York Times, John Hardwood, writer, “The Electoral Math of Romney’s Stance on Trade With China”, 3/22, http://www.nytimes.com/2012/03/23/us/politics/mitt-romneys-stance-on-china-trade.html?\_r=1&pagewanted=all)

WASHINGTON — Among all the elements of Mitt Romney’s 59-point economic plan, his vow to crack down on China’s trade policy would seem the most out of place. That is not because his promise to label China a “currency manipulator” and impose tariff penalties is unique. Plenty of politicians in both parties talk tough about Beijing. What is unusual is that Mr. Romney, a former financial executive identified with Republicans’ free-trade, pro-business wing, has promised to go further than Presidents Obama or George W. Bush in confronting China. Some other business-friendly Republicans warn that his approach could set off a counterproductive trade war that would damage the United States economy. The political question is whether Mr. Romney’s stance can attract enough votes to give him the chance to put it into effect. That question echoes through Republican primaries, in which he has struggled to connect with working-class conservatives, and a possible general election against Mr. Obama. Republican and Democratic strategists alike say that confronting China can play effectively to an anxious public’s sense of economic grievance. The Obama administration has recently lodged a complaint with the World Trade Organization against China’s handling of crucial rare earth mineral exports, and imposed tariffs on Chinese solar panels to counter what it considers unfair subsidies by Beijing. “With blue-collar voters specifically, there’s a perception that we have an economic adversary in China that doesn’t play by the rules,” said Geoff Garin, a Democratic pollster. And the concern “cuts across socioeconomic lines,” said Tony Fabrizio, a Republican pollster, who said higher-income voters fear that China’s ownership of United States government debt threatens American security. Yet prominent figures who generally share Mr. Romney’s economic outlook have criticized his stance, which the Wall Street Journal editorial page called “Romney’s China Blunder.” Business leaders, while pressing for China to open its markets and protect intellectual property, caution that labeling China a currency manipulator could backfire, harming those efforts. Jon M. Huntsman Jr., who was ambassador to China before embarking on his failed bid for the Republican presidential nomination, accused Mr. Romney of “total pandering” on the issue before exiting the race and endorsing him. Rick Santorum, now competing with Mr. Romney for blue-collar votes, has taken a similar view. “We all know Mitt Romney will do and say anything to get votes,” said Hogan Gidley, Mr. Santorum’s communications director. Mr. Obama’s advisers called Mr. Romney’s stance hypocritical. A Romney family blind trust owns a stake in an investment fund established by his former company, Bain Capital, that has bought a Chinese video surveillance company. And in his 2010 book, “No Apology,” Mr. Romney criticized Mr. Obama for levying a trade complaint against Chinese tire exports. Accusing Mr. Obama of acting to reward union supporters, he wrote, “Protectionism stifles productivity.” Mr. Romney’s China currency stance “is about as authentic as his brief flirtation with cheesy grits,” said David Axelrod, Mr. Obama’s top political strategist. “When you build a career around outsourcing, slashing jobs and wages, and profiting handsomely off of bankrupting companies, I don’t think people are going to be moved by what is an obvious election-year conversion.” One Romney adviser, Vin Weber, initially wondered whether the position reflected political calculation. When he joined internal discussions about Mr. Romney’s forthcoming economic plan last year, Mr. Weber said he sought to persuade other economic advisers to abandon the promised currency crackdown, which he still considers a policy mistake. Soon Mr. Weber was making that case directly to the candidate — who rejected the appeal and insisted his policy is the right one. “This is directly from him,” said Mr. Weber, a Washington lobbyist and former Republican congressman from Minnesota. “He believes it will strengthen his hand substantially. Mitt Romney is a person who sees himself as a successful negotiator.” Underpinning Mr. Romney’s argument is his assertion that recent presidents of both parties have been “played like a fiddle” by Chinese leaders. By keeping the yuan’s value lower against the dollar than market forces would dictate, Beijing makes exports to the United States cheaper and imports from the United States more expensive. In a Republican debate last year, Mr. Romney said China’s interest in smooth relations with a mammoth customer like the United States would preclude his actions from backfiring. “You think they want to have a trade war?” Mr. Romney said. “If you are not willing to stand up to China, you will get run over by China, and that’s what’s happened for 20 years.” That assertion grates on veterans of the Bush administration, which in 2006 began a “strategic economic dialogue” with China led by Treasury Secretary Henry M. Paulson Jr., a former chairman of Goldman Sachs. The Obama administration has extended that dialogue, pressing Beijing to raise the value of the yuan while stopping short of declaring China a currency manipulator. “Both the Bush and Obama administrations have been as aggressive as possible while protecting the American people,” said Neel T. Kashkari, a Bush administration Treasury official now at Pimco, the giant bond-trading firm. “Launching a trade war with China would hurt us as much as it would hurt them.” Mr. Romney’s economic plan makes it sounds as if he is willing to take that risk. It lists the currency crackdown among five executive orders he pledges to issue on “Day 1” of his presidency. But a close reading of the language suggests he has left himself an out. It pledges to label China a currency manipulator “if China does not quickly move to float its currency.” China has already been raising the value of its currency against the dollar somewhat in recent years, including by 4.7 percent in 2011. Some experts on China policy predict a President Romney would find a way to sidestep his pledge once electioneering gave way to governance. “It is a campaign, after all,” said Nicholas R. Lardy, a fellow at the Peterson Institute for International Economics. “My forecast is that if Romney becomes president there will be little or no change in our China policy.”

## 1ar

### AT: Distrotion

#### Federal loan guarantees causes market expansion – catalyzes capital investment

I21CE 11 Institute for 21st Century Energy, Mission of the U.S. Chamber of Commerce Institute for 21st Century Energy is to unify policymakers, regulators, business leaders, and the American public behind a common sense energy strategy to help keep America secure, prosperous, and clean, "Commit to and Expand Nuclear Energy Use", 2011 is copyright date, www.energyxxi.org/commit-and-expand-nuclear-energy-use

Nuclear power is currently an emissions-free source of 20% of America’s electricity supply, despite our not having licensed the construction of a nuclear power facility in nearly 30 years. Expansion of new nuclear power assets is essential to meet our projected growing demand while mitigating our emissions of CO2. As required by law, the federal government must provide authorized fiscal incentives for new nuclear power plants. We must solve our long-term nuclear waste challenges and aggressively expand efforts to recycle used nuclear fuel. Nuclear power is the nation’s largest emissions-free source of electricity. From a life-cycle perspective—including the impacts of uranium mining, uranium enrichment, fuel fabrication, plant construction, and fuel disposal—nuclear power offers a huge emissions advantage over any other large-scale method of baseload power generation and is on par with renewable sources. Nuclear power currently supplies about 20% of America’s electricity supply. America’s 104 operating nuclear power reactors are also the cheapest source of baseload electricityon a per-kilowatt-hour basis because operational and fuel costs are comparatively low. Although the existing nuclear units are successfully renewing their operating licenses for an additional 20 years, new nuclear power plants are essential to meet growing demand while avoiding GHG emissions. New nuclear power plants are capital-intensive, requiring an estimated $6–8 billion (2008 dollars) per plant. The U.S. electric power sector consists of many relatively small companies that do not have the size, financing capability, or financial strength to fund power projects of this scale on their own, in the numbers required. Outside financial support is necessary. The loan guarantee program authorized by EPAct2005 is a crucial tool to enable utilities to finance the construction of new reactors by increasing access to capital and enabling a higher share of leveraged debt. DOE estimates that by enabling a utility to rely more heavily on private debt than more expensive equity, a federal loan guarantee may save the ratepayers nearly 40% in the cost of power from a new nuclear plant. A well-managed loan guarantee program will be funded by project applicants and not require any expenditure of government funds. Unfortunately, the loan guarantee program has not been implemented effectively by the DOE, and the $18.5 billion in loan volume authorized by Congress for nuclear power projects is inadequate, given the estimated cost of a new nuclear power plant. That loan volume will support, at best, two, or three new projects. The current program should be expanded, and at the appropriate time merged with the Clean Energy Bank of the United States discussed earlier. The time it takes to license and build a nuclear power plant—now estimated at a minimum of eight years—is one reason the financing costs are high. The Nuclear Regulatory Commission (NRC) estimates it will take three and one-half years to review the first wave of new license applications for new designs. This period must be reduced for subsequent applications without compromising safety, and Congress must ensure the NRC has adequate resources to process license applications as expeditiously as possible. The regulatory and licensing framework has improved significantly since the 1980s, when we saw completed plants sit idle while awaiting issuance of operating licenses, but the NRC has yet to issue a Construction and Operating License under the new process. Project sponsors and investors have significant questions about whether the new process will deliver timely approvals. Delays in starting up a completed plant will subject its owners to substantial financial costs. The standby support program, established in EPAct2005, could be an effective insurance policy for nuclear plant owners against delays in the regulatory process or from litigation outside of the plant owner’s control. While this is a potentially useful tool to encourage first-movers to test the process, several changes are necessary to broaden the scope of the coverage. As currently structured, the statutory liability cap is now too low and does not reflect today’s market costs.

### AT: Green Bubble

#### No Green Bubble

**Yarow 9** [Jay, “The Green Bubble That Won't Take Shape”, B.A. Economics University of Delaware, M.A. New York University, Business Insider, March 4, 2009]

The billions he's pouring into the new energy programs will help lift, and in some cases, create whole new industries. But will his programs replace one problem with another, turning the housing bubble into a "green" bubble? We don't think so.¶ Yesterday [in the FT](http://www.businessinsider.com/the-market-is-mispricing-the-atmosphere-2009-3), Joseph Stiglitz and economist Nicholas Stern wrote:The financial crisis originated from the housing market bubble and was preceded by the dotcom boom. We cannot replace these with yet another bubble. The investments necessary to convert our society to a low-carbon economy – investments that can change the way we live and work – would drive growth over the next two or three decades. They would ensure that growth, with accompanying improvements in standards of living, was sustainable. The path that we have been on is not. They go on to say that investment in green will increase efficiency providing both short term and long term stimulus for the country, but they never really address why we couldn't see another green bubble. The hype we hear around green investment, would lead us to think it's possible, if not inevitable. After all, Merrill Lynch cleantech analyst Steven Milunovich strategist [said](http://www.greentechmedia.com/articles/the-coming-of-the-cleantech-era-5540.html), the "sixth revolution will be the Age of Cleantech and Biotech," in an editorial for Greentech Media. (Previous revolutions: Industrial Revolution, Age of Steam and Railways, Age of Steel, Electricity, and Heavy Engineering, Age of Oil, Automobiles, and Mass Production, Age of Information and Telecommunications.) That's the kind of stuff that makes great cold-calling script material. A revolution would imply that there is going to be a frenzy of activity that could inflate asset values. In our current bust, any technology that can promise returns would be nice. We, however, don't think there will be a bubble this time around.¶ Even though the most recent housing bubble blew up and *blew up* on the heels of a internet bubble, it's unlikely to think the nation, the globe, will have lost its taste for bubbles. So, while we'd hope there would be prudence, we know that's not really our style, so our amnesia-prone minds would induce us to blow up a green bubble.¶ Where our memory fails us, economics shold kick in, though. The slow thaw of credit will slow investment, which will prevent gobs of money from going to alternative energy projects the way it flowed into ill-fated real estate speculation and construction projects. And, while the billions from the government will act as a gap for a few years, the one thing we can be sure of is that it cash won't come swiftly no matter the rhetoric. Take all that into account, the capital influx into green projects is likely to be more orderly and less so a bubble-inducing grab bag.

### AT: Licensing

#### NRC is rubber stamp for nuke licensing – will cave to industry pressure

Karl Grossman (full professor of journalism at the State University of New York College at Old Westbury. For more than 45 years he has pioneered the combination of investigative reporting and environmental journalism in a variety of media, writer for the Huffington Post) May 30, 2012 “USA’s Nuclear Regulatory Commission is into nuclear promotion rather than nuclear safety” http://nuclear-news.info/2012/06/04/usas-nuclear-regulatory-commission-is-into-nuclear-promotion-rather-than-nuclear-safety/

The resignation last week of the chairman of the U.S. Nuclear Regulatory Commission is another demonstration of the bankrupt basis of the NRC. Gregory Jaczko repeatedly called for the NRC to apply “lessons learned” from the Fukushima Daiichi nuclear plant disaster in Japan. And, for that, the nuclear industry — quite successfully — went after him fiercely. The New York Times, in an editorial over the weekend , said that President Obama’s choice to replace Jaczko, Allison Macfarlane, “will need to be as independent and aggressive as Dr. Jaczko.” That misses the institutional point. The NRC was created in 1974 when Congress abolished the U.S. Atomic Energy Commission after deciding that the AEC’s dual missions of promoting and at the same time regulating nuclear power were deemed a conflict of interest. The AEC was replaced by the NRC, which was to regulate nuclear power, and a Department of Energy was later formed to advocate for it. However, the same extreme pro-nuclear culture of the AEC continued on at the NRC. It has partnered with the DOE in promoting nuclear power. Indeed, neither the AEC, in its more than 25 years, nor the NRC, in its nearly 30 years, ever denied an application for a construction or operating license for a nuclear power plant anywhere, anytime in the United States. The NRC is a rubberstamp for the nuclear industry. “NRC stands for Nuclear Rubberstamp Commission,” says Kevin Kamps of the organization Beyond Nuclear. And it isn’t that Jaczko opposed nuclear power. “Greg is not anti-nuclear, but he’s pro-nuclear in a smart and considered way,” says Christopher Paine , director of the nuclear program at the Natural Resources Defense Council.

### AT: Elections Impact Stuff

#### Relations are impossible and won’t result in cooperation

**LaFranchi, 3/3/12** [Christian Science Monitor, “A cold-war chill US-Russia relations falter over Libya and Syria”, http://www.csmonitor.com/USA/Foreign-Policy/2012/0303/A-cold-war-chill-US-Russia-relations-falter-over-Libya-and-Syria/%28page%29/2]

Secretary of State Hillary Rodham Clinton doffed her diplomatic gloves after Russia vetoed a United Nations Security Council resolution on Syria. Calling the February veto "despicable," she laid at Moscow's feet the "murders" of Syrian "women, children, [and] brave young men."

Not to be outdone, Russian Prime Minister Vladimir Putin railed against the United States for indulging its "bellicose itch" to get involved in other countries' internal affairs. And he vowed that Russia will thwart American designs in the Middle East.

Whatever happened to the "reset," President Obama's ballyhooed reorientation of US-Russia relations to a more cooperative path focused on common interests?

Russia would say Libya happened – the conflict where the West and the US in particular demonstrated a zeal for intervention that struck at Russia's sense of sovereignty and of what the UN should and shouldn't do. The US would say Syria happened – revealing Russia's revived obstructionist tendencies on the Security Council and demonstrating Russia's determination to protect an old ally at the expense of the Syrian people.

Both countries might say that what happened is this: The common interests that the "reset" was meant to emphasize – arms control, counterterrorism, the global economy – have taken a back seat to awakened geopolitical rivalries and **diverging** international **visions**.

Add to this the fact that Mr. Putin is expected to return to Russia's presidency in elections Sunday, bringing with him a blame-the-west perspective for explaining many of Russia's ills.

The result is that stormy days lie ahead for US-Russia relations, many say. Progress on issues like missile defense and NATO-Russia relations is likely to remain stalled – and could suffer serious setbacks if the Syria and Iran crises deteriorate further.

"I foresee a tough year for US-Russia relations," says Andrew Weiss, a former director for Russian affairs on the National Security Council under President Clinton who is now a Russia analyst at the RAND Corp. in Arlington, Va. With little prospect for advances, he adds, the Obama administration is likely to focus on preventing backsliding. "The emphasis will be on ensuring that these fast-moving conflicts don't put the remaining areas of cooperation at risk," he says.

Others say the current frictions demonstrate how relations, despite the efforts of three administrations, have never overcome cold-war mistrusts to progress to a deeper level.

"Under both Clinton and Bush, the US made it look like things were moving forward with Russia by focusing on things that were easier to do and that didn't require sacrifice from either side," says Paul Saunders, executive director of the Center for the National Interest in Washington.

Three years ago this month, President Obama said he **hoped to promote** more **cooperation** between the U.S. and Russia. It would be hard to see how that may happen as Vladimir Putin approaches power once again. Host Scott Simon speaks with the U.S. ambassador to Russia, Michael McFaul, about Sunday's elections in Russia.

### Frankenstorm Thumper

#### Frankenstorm thumps either way – even if it helps Obama it will be the only issue the media focuses on

**Liptak, 10/26/12** (Kevin, CNN, “'Superstorm' meets barnstorm as weather and politics collide”

<http://politicalticker.blogs.cnn.com/2012/10/26/frankenstorm-meets-barnstorm-as-weather-and-politics-collide/>

While Obama and Romney have a host of battlegrounds states to visit that are out of the storm's path – including Colorado, Iowa and Ohio – the consequences of a major storm would echo beyond mere logistics. A hurricane hitting the most densely populated section of the country would also suck media coverage from the campaign, as television networks and newspapers deploy resources to cover weather rather than politics.

It could also provide a contrast between the two candidates – one who is a sitting president, and one who wants to become one.

#### Even if its unpredictable, it will still cause the small shifts in voting their internal links depend on

**Sarlin, 10/26/12 -** political reporter for Talking Points Memo and co-writes the site's campaign blog (Benjy, “The Sandy Effect: Hurricane Could Disrupt Voting And Polls” Talking Points Memo,

<http://2012.talkingpointsmemo.com/2012/10/the-sandy-effect-hurricane-could-disrupt-voting-and-polls.php>)

The implications for the election are uncertain, as is the path and extent of the storm’s damage. But given that it’s projected to directly impact such states as North Carolina, Virginia, Pennsylvania, and Ohio, there’s plenty of potential for disruption.

In Virginia, the storm is already poised to wreck a scheduled joint rally with President Clinton and president Obama on Monday. Romney has already cancelled a Virginia Beach event for Sunday. Early voting is less widespread in the state than others like Ohio, since Virginia only accepts absentee votes, so the impact could be minimized at the ballot box if things are back to normal by election day.

That said, if there’s major flooding or snow, where it hits could have an influence. While the coast is evenly divided between swing counties, other regions are more polarized.

“It depends on where it hits and how much, it’s just impossible to say in advance,” Larry Sabato, director of the University of Virginia Center for Politics, told TPM. “If Obama were directing the snowstorm it would be in the Shenandoah valley and Southwest Virginia as they want as low a turnout as possible in those rural areas. If Romney were directing the snowstorm, it would go right down the corridor from Northern Virginia into Richmond, which is where Obama’s votes come from.”

There’s some precedent for these types of problems. In 1985, Doug Wilder won a tight race for Lt. Governor amid major flooding in conservative rural counties that officials said at the time made some precincts virtually inaccessible.

Ohio is another place to watch. Heavy snow could make things more difficult in the many smaller counties where Romney is expected to dominate, but if it hits the more Democratic northwest corner of the state that could have an outsize impact on early voting. Speaking of early voting, it can’t hurt that Democrats already have a big lead banked before whatever weather heads their way.

A rough storm “could put a damper on turnout, especially in rural areas where it is harder to get to polling places,” according to Paul Beck, a professor of political science at Ohio State. “Weather can overcome voting intentions for those who are not strongly motivated to vote,” he added.

#### It will destroy turnout – means you can’t trust any polls

**International Digital Times, 10/26/**12 (“Frankenstorm 2012: How Will Hurricane Sandy Affect The Presidential Election?” <http://www.idigitaltimes.com/articles/12271/20121026/frankenstorm-2012-hurricane-sandy-usa-presidential-election.htm>)

Given the strong possibilities of both snow fall and strong wind gusts, the threat of disruptive power outages is particularly high. In a video from the Associated Press, AP Science writer Seth Borenstein explains that the Frankenstorm will not only stand to interrupt Halloween, but potential power outages can spell disaster for the 2012 presidential election as well.

While the states New Jersey and New York will be bearing the brunt of the Frankenstorm, Hurricane Sandy will be travelling from Florida and will potentially reach Maine. The storm is also predicted to reach as far inland as Ohio. If towns disrupted by the storm do not regain power in time for the election, then we may see a great deviation from what the results reveal and from how Americans truly feel.

Swing states that stand in the wake of Frankenstorm devestation include Florida, North Carolina, Florida, Virginia, and possibly Ohio and New Hampshire.

#### The storm will disproportionately benefit the GOP – could swing the election

**Weiner, 10/26**/12 (Rachel, Washington Post, “How Hurricane Sandy could affect the election” <http://www.washingtonpost.com/blogs/election-2012/wp/2012/10/26/how-hurricane-sandy-could-affect-the-election/>)

Could the deadly Hurricane Sandy, headed for the East Coast, have an impact on the election?

The storm is already affecting campaign schedules — Romney has canceled a planned rally in Virginia Beach. While the storm is expected to have passed by Nov. 6, it could leave flooding, power outages and destruction in its wake that would make it hard for voters to get to the polls. Two key states — Virginia and North Carolina — are in the path of the storm. So is Pennsylvania, a Democratic-leaning state that Republicans often eye. Rain showers and wind have already hit the coast of Florida. Parts of Ohio will feel the effects.

A senior adviser to President Obama said that the campaign doesn’t expect the storm to be a major issue. But according to a 2007 study published in the Journal of Politics, bad weather generally helps Republicans — better weather, the authors say, would have won Al Gore Florida in 2000. Another study, from 2004, found that “voters regularly punish governments for acts of God, including droughts, floods, and shark attacks.”

# Round 7 – Neg v Texas CM

## 1nc

### 1nc framework

#### The resolution is a policy question

**Parcher 2001** (Jeff, Former Debate Coach at Georgetown University, February, http://www.ndtceda.com/archives/200102/0790.html)

(1) Pardon me if I turn to a source besides Bill. American Heritage Dictionary: Resolve: 1. To make a firm decision about. 2. To decide or express by formal vote. 3. To separate something into constituent parts See Syns at \*analyze\* (emphasis in original) 4. Find a solution to. See Syns at \*Solve\* (emphasis in original) 5. To dispel: resolve a doubt. - n 1. Frimness of purpose; resolution. 2. A determination or decision. (2) The very nature of the word "resolution" makes it a question. American Heritage: A **course of action** determined or decided on. A formal statement of a decision, as by a legislature. (3) The resolution is obviously a question. Any other conclusion is utterly inconceivable. Why? Context. The debate community empowers a topic committee to write a topic for ALTERNATE side debating. The committee is not a random group of people coming together to "reserve" themselves about some issue. There is context - they are empowered by a community to do something. In their deliberations, the topic community attempts to craft a resolution which can be ANSWERED in either direction. They focus on issues like ground and fairness because they know the resolution will serve as the basis for debate which will be resolved by determining the policy desireablility of that resolution. That's not only what they do, but it's what we REQUIRE them to do. We don't just send the topic committtee somewhere to adopt their own group resolution. It's not the end point of a resolution adopted by a body - it's the prelimanary wording of a resolution sent to others to be answered or decided upon. (4) Further context: the word resolved is used to emphasis the fact that it's policy debate. Resolved comes from the adoption of resolutions by legislative bodies. A resolution is either adopted or it is not. It's a question before a legislative body. Should this statement be adopted or not. (5) The very terms 'affirmative' and 'negative' support my view. One affirms a resolution. Affirmative and negative are the equivalents of 'yes' or 'no' - which, of course, are answers to a question.

#### Resolve entails questions of lawmaking

**Words and Phrases**, **1964** (Permanent Edition)

Definition of the word “resolve,” given by Webster is “to express an opinion or determination by resolution or vote; as ‘it was resolved by the legislature;” It is of similar force to the word “enact,” which is defined by Bouvier as meaning “to establish by law”.

#### The resolution indicates affs should advocate topical government change

**Ericson 3** (Jon M., Dean Emeritus of the College of Liberal Arts – California Polytechnic U., et al., The Debater’s Guide, Third Edition, p. 4)

The Proposition of Policy: Urging Future Action In policy propositions, each topic contains certain key elements, although they have slightly different functions from comparable elements of value-oriented propositions. 1. An agent doing the acting ---“The United States” in “The United States should adopt a policy of free trade.” Like the object of evaluation in a proposition of value, the agent is the subject of the sentence. 2. The verb should—the first part of a verb phrase that urges action. 3. An action verb to follow should in the should-verb combination. For example, should adopt here means to put a program or policy into action though governmental means. 4. A specification of directions or a limitation of the action desired. The phrase free trade, for example, gives direction and limits to the topic, which would, for example, eliminate consideration of increasing tariffs, discussing diplomatic recognition, or discussing interstate commerce. Propositions of policy deal with future action. Nothing has yet occurred. The entire debate is about whether something ought to occur. What you agree to do, then, when you accept the affirmative side in such a debate is to offer sufficient and compelling reasons for an audience to perform the future action that you propose.

#### Specific, limited resolutions ensure mutual ground which is key to sustainable controversy without sacrificing creativity or openness

**Steinberg & Freeley 8** \*Austin J. Freeley is a Boston based attorney who focuses on criminal, personal injury and civil rights law, AND \*\*David L. Steinberg , Lecturer of Communication Studies @ U Miami, Argumentation and Debate: Critical Thinking for Reasoned Decision Making pp45-

Debate is a means of settling differences, so there must be a difference of opinion or a conflict of interest before there can be a debate. If everyone is in agreement on a tact or value or policy, there is no need for debate: the matter can be settled by unanimous consent. Thus, for example, it would be pointless to attempt to debate "Resolved: That two plus two equals four," because there is simply no controversy about this statement. (Controversy is an essential prerequisite of debate. Where there is no clash of ideas, proposals, interests, or expressed positions on issues, there is no debate. In addition, debate cannot produce effective decisions without clear identification of a question or questions to be answered. For example, general argument may occur about the **broad topic** of illegal immigration. How many illegal immigrants are in the United States? What is the impact of illegal immigration and immigrants on our economy? What is their impact on our communities? Do they commit crimes? Do they take jobs from American workers? Do they pay taxes? Do they require social services? Is it a problem that some do not speak English? Is it the responsibility of employers to discourage illegal immigration by not hiring undocumented workers? Should they have the opportunity- to gain citizenship? Docs illegal immigration pose a security threat to our country? Do illegal immigrants do work that American workers are unwilling to do? Are their rights as workers and as human beings at risk due to their status? Are they abused by employers, law enforcement, housing, and businesses? I low are their families impacted by their status? What is the moral and philosophical obligation of a nation state to maintain its borders? Should we build a wall on the Mexican border, establish a national identification can!, or enforce existing laws against employers? Should we invite immigrants to become U.S. citizens? Surely you can think of many more concerns to be addressed by a conversation about the topic area of illegal immigration. Participation in this "debate" is likely to be emotional and intense. However, it is not likely to be productive or useful without focus on a particular question and identification of a line demarcating sides in the controversy. To be discussed and resolved effectively, controversies must be stated clearly. **Vague understanding** results in unfocused deliberation and poor decisions, frustration, and emotional distress, as evidenced by the failure of the United States Congress to make progress on the immigration debate during the summer of 2007.

Someone disturbed by the problem of the growing underclass of poorly educated, socially disenfranchised youths might observe, "Public schools are doing a terrible job! They are overcrowded, and many teachers are poorly qualified in their subject areas. Even the best teachers can do little more than struggle to maintain order in their classrooms." That same concerned citizen, facing a complex range of issues, might arrive at an unhelpful decision, such as "We ought to do something about this" or. worse. "It's too complicated a problem to deal with." Groups of concerned citizens worried about the state of public education could join together to express their frustrations, anger, disillusionment, and emotions regarding the schools, but without a focus for their discussions, they could easily agree about the sorry state of education **without** finding points of clarity or potential solutions. A gripe session would follow. But if a precise question is posed—such as "What can be done to improve public education?"—then a more profitable area of discussion is opened up simply by placing a focus on the search for a concrete solution step. One or more judgments can be phrased in the form of debate propositions, motions for parliamentary debate, or bills for legislative assemblies. The statements "Resolved: That the federal government should implement a program of charter schools in at-risk communities" and "Resolved: That the state of Florida should adopt a school voucher program" more clearly identify specific ways of dealing with educational problems in a manageable form, suitable for debate. They provide specific policies to be investigated and aid discussants in identifying points of difference.

To have a productive debate, which facilitates effective decision making by directing and placing limits on the decision to be made, the basis for argument should be clearly defined. If we merely talk about "homelessness" or "abortion" or "crime'\* or "global warming" we are likely to have an interesting discussion but not to establish profitable basis for argument. For example, the statement "Resolved: That the pen is mightier than the sword" is debatable, yet fails to provide much basis for clear argumentation. If we take this statement to mean that the written word is more effective than physical force for some purposes, we can identify a problem area: the comparative effectiveness of writing or physical force for a specific purpose.

Although we now have a general subject, we have not yet stated a problem. It is still too broad, too loosely worded to promote well-organized argument. What sort of writing are we concerned with—poems, novels, government documents, website development, advertising, or what? What does "effectiveness" mean in this context? What kind of physical force is being compared—fists, dueling swords, bazookas, nuclear weapons, or what? A more specific question might be. "Would a mutual defense treaty or a visit by our fleet be more effective in assuring Liurania of our support in a certain crisis?" The basis for argument could be phrased in a debate proposition such as "Resolved: That the United States should enter into a mutual defense treatv with Laurania." Negative advocates might oppose this proposition by arguing that fleet maneuvers would be a better solution. This is not to say that debates should completely avoid creative interpretation of the controversy by advocates, or that good debates cannot occur over competing interpretations of the controversy; in fact, these sorts of debates may be very engaging. The point is that debate is best facilitated by the guidance provided by **focus on a particular point of difference**, which will be outlined in the following discussion.

#### Deliberation requires a predetermined subject—they over-determine the rez more than us by assuming debates are the ultimate arbiter of its value as opposed to a means to facilitate clash

Adolf G. **Gundersen,** Associate Professor of Political Science, Texas A&M, **2000**

POLITICAL THEORY AND PARTISAN POLITICS, 2000, p. 104-5. (DRGNS/E625)

Indirect political engagement is perhaps the single most important element of the strategy I am recommending here. It is also the most emblematic, as it results from a fusion of confrontation and separation. But what kind of political engagement might conceivably qualify as being both confrontational and separated from actual political decision-making? There is only one type, so far as I can see, and that is deliberation. Political deliberation is by definition a form of engagement with the collectivity of which one is a member. This is all the more true when two or more citizens deliberate together. Yet deliberation is also a form of political action that **precedes the actual** taking and **implementation** of decisions. It is thus simultaneously connected and disconnected, confrontational and separate. It is, in other words, a form of indirect political engagement. This conclusion, namely, that we ought to call upon deliberation to counter partisanship and thus clear the way for deliberation, looks rather circular at first glance. And, semantically at least, it certainly is. Yet this ought not to concern us very much. Politics, after all, is not a matter of avoiding semantic inconveniences, but of doing the right thing and getting desirable results. In political theory, therefore, the real concern is always whether a circular argument translates into a self-defeating prescription. And here that is plainly not the case, for what I am suggesting is that deliberation can diminish partisanship, which will in turn contribute to conditions amenable to continued or extended deliberation. That "deliberation promotes deliberation" is surely a circular claim, but it is just as surely an accurate description of the real world of lived politics, as observers as far back as Thucydides have documented. It may well be that deliberation rests on certain preconditions. I am not arguing that there is no such thing as a deliberative "first cause." Indeed, it seems obvious to me both that deliberators **require something to deliberate about and that** deliberation **presumes certain institutional structures** and shared values. Clearly something must get the deliberative ball rolling and, to keep it rolling, the cultural terrain must be free of deep chasms and sinkholes. Nevertheless, however extensive and demanding deliberation's preconditions might be, we ought not to lose sight of the fact that, once begun, deliberation tends to be self-sustaining. Just as partisanship begets partisanship, deliberation begets deliberation. If that is so, the question of limiting partisanship and stimulating deliberation are to an important extent the same question.

#### Topical fairness requirements are key to effective dialogue—monopolizing strategy and prep makes the discussion one-sided and subverts any meaningful neg role

**Galloway 7** – professor of communications at Samford University (Ryan, “Dinner And Conversation At The Argumentative Table: Reconceptualizing Debate As An Argumentative Dialogue”, Contemporary Argumentation and Debate, Vol. 28 (2007), ebsco)

Debate as a dialogue sets an argumentative table, where all parties receive a relatively fair opportunity to voice their position. Anything that fails to allow participants to have their position articulated denies one side of the argumentative table a fair hearing. The affirmative side is set by the topic and fairness requirements. While affirmative teams have recently resisted affirming the topic, in fact, the topic selection process is rigorous, taking the relative ground of each topic as its central point of departure.¶ Setting the affirmative reciprocally sets the negative. The negative crafts approaches to the topic consistent with affirmative demands. The negative crafts disadvantages, counter-plans, and critical arguments premised on the arguments that the topic allows for the affirmative team. According to fairness norms, each side sits at a relatively balanced argumentative table.¶ When one side takes more than its share, competitive equity suffers. However, it also undermines the respect due to the other involved in the dialogue. When one side excludes the other, it fundamentally denies the personhood of the other participant (Ehninger, 1970, p. 110). A pedagogy of debate as dialogue takes this respect as a fundamental component. A desire to be fair is a fundamental condition of a dialogue that takes the form of a demand for equality of voice. **Far from** being **a banal request for links** to a disadvantage, fairness is a demand for respect, a demand to be heard, a demand that a voice backed by literally months upon **months of preparation**, research, and critical thinking not be silenced.¶ Affirmative cases that suspend basic fairness norms **operate to exclude** particular negative strategies. Unprepared, one side comes to the argumentative table unable to meaningfully participate in a dialogue. They are unable to “understand what ‘went on…’” and are left to the whims of time and power (Farrell, 1985, p. 114). Hugh Duncan furthers this line of reasoning:¶ Opponents not only tolerate but honor and respect each other because in doing so they enhance their own chances of thinking better and reaching sound decisions. Opposition is necessary because it sharpens thought in action. We assume that argument, discussion, and talk, among free an informed people who subordinate decisions of any kind, because it is only through such discussion that we reach agreement which binds us to a common cause…If we are to be equal…relationships among equals must find expression in many formal and informal institutions (Duncan, 1993, p. 196-197).¶ **Debate compensates for the exigencies of the world by offering a framework that maintains equality for the sake of the conversation** (Farrell, 1985, p. 114).¶ For example, an affirmative case on the 2007-2008 college topic might defend neither state nor international action in the Middle East, and yet claim to be germane to the topic in some way. The case essentially denies the arguments that state action is oppressive or that actions in the international arena are philosophically or pragmatically suspect. Instead of allowing for the dialogue to be modified by the interchange of the affirmative case and the negative response, the affirmative subverts any meaningful role to the negative team, preventing them from offering effective “counter-word” and undermining the value of a meaningful exchange of speech acts. **Germaneness and other substitutes for topical action do not accrue the dialogical benefits** of topical advocacy.

#### Game spaces like debate are distinct from other forms of education and public speaking. There has to be a balance of ground or else one side claims the moral high ground and creates a de facto monologue

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Debate games are often based on pre-designed scenarios that include descriptions of issues to be debated, educational goals, game goals, roles, rules, time frames etc. In this way, debate games differ from textbooks and everyday classroom instruction as debate scenarios allow teachers and students to actively imagine, interact and communicate within a domain-specific game space. However, instead of mystifying debate games as a “magic circle” (Huizinga, 1950), I will try to overcome the epistemological dichotomy between “gaming” and “teaching” that tends to dominate discussions of educational games. In short, educational gaming is a form of teaching. As mentioned, education and games represent two different semiotic domains that both embody the three faces of knowledge: assertions, modes of representation and social forms of organisation (Gee, 2003; Barth, 2002; cf. chapter 2). In order to understand the interplay between these different domains and their interrelated knowledge forms, I will draw attention to a central assumption in Bakhtin’s dialogical philosophy. According to Bakhtin, all forms of communication and culture are subject to centripetal and centrifugal forces (Bakhtin, 1981). A centripetal force is the drive to impose one version of the truth, while a centrifugal force involves a range of possible truths and interpretations. This means that any form of expression involves a duality of centripetal and centrifugal forces: “Every concrete utterance of a speaking subject serves as a point where centrifugal as well as centripetal forces are brought to bear” (Bakhtin, 1981: 272). If we take teaching as an example, it is always affected by centripetal and centrifugal forces in the on-going negotiation of “truths” between teachers and students. In the words of Bakhtin: “Truth is not born nor is it to be found inside the head of an individual person, it is born between people collectively searching for truth, in the process of their dialogic interaction” (Bakhtin, 1984a: 110). Similarly, the dialogical space of debate games also embodies centrifugal and centripetal forces. Thus, the election scenario of The Power Game involves centripetal elements that are mainly determined by the rules and outcomes of the game, i.e. the election is based on a limited time frame and a fixed voting procedure. Similarly, the open-ended goals, roles and resources represent centrifugal elements and create virtually endless possibilities for researching, preparing, presenting, debating and evaluating a variety of key political issues. Consequently, the actual process of enacting a game scenario involves a complex negotiation between these centrifugal/centripetal forces that are inextricably linked with the teachers and students’ game activities. In this way, the enactment of The Power Game is a form of teaching that combines different pedagogical practices (i.e. group work, web quests, student presentations) and learning resources (i.e. websites, handouts, spoken language) within the interpretive frame of the election scenario. Obviously, tensions may arise if there is too much divergence between educational goals and game goals. This means that game facilitation requires a balance between focusing too narrowly on the rules or “facts” of a game (centripetal orientation) and a focusing too broadly on the contingent possibilities and interpretations of the game scenario (centrifugal orientation). For Bakhtin, the duality of centripetal/centrifugal forces often manifests itself as a dynamic between “monological” and “dialogical” forms of discourse. Bakhtin illustrates this point with the monological discourse of the Socrates/Plato dialogues in which **the teacher never learns anything new** from the students, despite Socrates’ ideological claims to the contrary (Bakhtin, 1984a). Thus, discourse becomes monologised when “someone who knows and possesses the truth **instructs someone** who is ignorant of it and in error”, where “a thought is either affirmed or repudiated” by the authority of the teacher (Bakhtin, 1984a: 81). In contrast to this, dialogical pedagogy fosters inclusive learning environments that are able to expand upon students’ existing knowledge and collaborative construction of “truths” (Dysthe, 1996). At this point, I should clarify that Bakhtin’s term “dialogic” is both a descriptive term (all utterances are per definition dialogic as they address other utterances as parts of a chain of communication) and a normative term as dialogue is an ideal to be worked for against the forces of “monologism” (Lillis, 2003: 197-8). In this project, I am mainly interested in describing the dialogical space of debate games. At the same time, I agree with Wegerif that “one of the goals of education, perhaps the most important goal, should be dialogue as an end in itself” (Wegerif, 2006: 61).

#### The impact outweighs—deliberative debate models impart skills vital to respond to existential threats

Christian O. **Lundberg 10** Professor of Communications @ University of North Carolina, Chapel Hill, “Tradition of Debate in North Carolina” in Navigating Opportunity: Policy Debate in the 21st Century By Allan D. Louden, p. 311

The second major problem with the critique that identifies a naivety in articulating debate and democracy is that it presumes that the primary pedagogical outcome of debate is speech capacities. But the democratic capacities built by debate are not limited to speech—as indicated earlier, debate builds capacity for critical thinking, analysis of public claims, informed decision making, and better public judgment. If the picture of modem political life that underwrites this critique of debate is a pessimistic view of increasingly labyrinthine and bureaucratic administrative politics, rapid scientific and technological change outpacing the capacities of the citizenry to comprehend them, and ever-expanding insular special-interest- and money-driven politics, it is a puzzling solution, at best, to argue that these conditions warrant giving up on debate. If democracy is open to rearticulation, it is open to rearticulation precisely because as the challenges of modern political life proliferate, the citizenry's capacities can change, which is one of the primary reasons that theorists of democracy such as Ocwey in The Public awl Its Problems place such a high premium on education (Dewey 1988,63, 154). Debate provides an indispensible form of education in the modem articulation of democracy because it builds precisely the skills that allow the citizenry to research and be informed about policy decisions that impact them, to son rhroueh and evaluate the evidence for and relative merits of arguments for and against a policy in an increasingly infonnation-rich environment, and to prioritize their time and political energies toward policies that matter the most to them.

The merits of debate as a tool for building democratic capacity-building take on a special significance in the context of information literacy. John Larkin (2005, HO) argues that one of the primary failings of modern colleges and universities is that they have not changed curriculum to match with the challenges of a new information environment. This is a problem for the course of academic study in our current context, but perhaps more important, argues Larkin, for the future of a citizenry that will need to make evaluative choices against an increasingly complex and multimediatcd information environment (ibid-). Larkin's study tested the benefits of debate participation on information-literacy skills and concluded that in-class debate participants reported significantly higher self-efficacy ratings of their ability to navigate academic search databases and to effectively search and use other Web resources:

To analyze the self-report ratings of the instructional and control group students, we first conducted a multivariate analysis of variance on all of the ratings, looking jointly at the effect of instmction/no instruction and debate topic . . . that it did not matter which topic students had been assigned . . . students in the Instnictional [debate) group were significantly more confident in their ability to access information and less likely to feel that they needed help to do so----These findings clearly indicate greater self-efficacy for online searching among students who participated in (debate).... These results constitute strong support for the effectiveness of the project on students' self-efficacy for online searching in the academic databases. There was an unintended effect, however: After doing ... the project, instructional group students also felt more confident than the other students in their ability to get good information from Yahoo and Google. It may be that the library research experience increased self-efficacy for any searching, not just in academic databases. (Larkin 2005, 144)

Larkin's study substantiates Thomas Worthcn and Gaylcn Pack's (1992, 3) claim that debate in the college classroom plays a critical role in fostering the kind of problem-solving skills demanded by the increasingly rich media and information environment of modernity. Though their essay was written in 1992 on the cusp of the eventual explosion of the Internet as a medium, Worthcn and Pack's framing of the issue was prescient: the primary question facing today's student has changed from how to best research a topic to the crucial question of learning how to best evaluate which arguments to cite and rely upon from an easily accessible and veritable cornucopia of materials.

There are, without a doubt, a number of important criticisms of employing debate as a model for democratic deliberation. But cumulatively, the evidence presented here warrants strong support for expanding debate practice in the classroom as a technology for enhancing democratic deliberative capacities. The unique combination of critical thinking skills, research and information processing skills, oral communication skills, and capacities for listening and thoughtful, open engagement with hotly contested issues argues for debate as a crucial component of a rich and vital democratic life. In-class debate practice both aids students in achieving the best goals of college and university education, and serves as an unmatched practice for creating thoughtful, engaged, open-minded and self-critical students who are open to the possibilities of meaningful political engagement and new articulations of democratic life.

Expanding this practice is crucial, if only because the more we produce citizens that can actively and effectively engage the political process, the more likely we are to produce revisions of democratic life that are necessary if democracy is not only to survive, but to thrive. Democracy faces a myriad of challenges, including: domestic and international issues of class, gender, and racial justice; wholesale environmental destruction and the potential for rapid climate change; emerging threats to international stability in the form of terrorism, intervention and new possibilities for great power conflict; and increasing challenges of rapid globalization including an increasingly volatile global economic structure. More than any specific policy or proposal, an informed and active citizenry that deliberates with greater skill and sensitivity provides one of the best hopes for responsive and effective democratic governance, and by extension, one of the last best hopes for dealing with the existential challenges to democracy [in an] increasingly complex world.

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#### Oil prices will stabilize at breakeven levels

Irina Rogovaya August 2012; writer for Oil and Gas Eurasia, Oil Price Changes: Everyone Wants Stability <http://www.oilandgaseurasia.com/articles/p/164/article/1875/>

According to the current base forecast for the Eurozone prepared by Oxford Economics, within the next two years oil prices will continue to drift lower, but not beyond the bounds of the “green” corridor for the world economy – $80-100 per barrel. This forecast coincides with the expectations of the World Bank (see Fig. 4). Meanwhile, S&P analysts presented three scenarios for the energy market in June. In the base scenario, oil will remain at $100 per barrel. S&P calculates that the likelihood of a stressful scenario in which the price of oil drops below $60 per barrel (the bottom in 2009) is 1:3. Analysts believe that given today’s state of economic and geopolitical affairs, strong political will would be needed to force the price of oil below $70-80 (the current level of effective production). So far, that will is nowhere to be seen. Recent events have shown that nobody is interested in the Eurozone breaking apart. And nobody wants a war in the Persian Gulf. Furthermore, nobody today intends to force the production of less valuable oil. At least that is what OPEC leaders promised during the recent summit. “Stability on the market should be at the center of our attention,” General Secretary Abdalla El-Badri said. Even Saudi Arabia, which consistently violates OPEC discipline in over-producing its quotas, announced at the beginning of July that it would review its margins to determine a higher price for Saudi supplies ordered on August contracts. Analysts noted that the average price of oil supplied to Europe and Asia had jumped (by $0.85 and $0.66 per barrel respectively), a fact which could be seen as proof that the collective members of the cartel will not let prices fall under $100 per barrel.

#### Speculation controls oil prices – links to the plan incentivizing any part of the energy production chain can have ripple effects on the market

Professional Wealth Management (PWM) 6-1-2011 Commodity funds - Speculative investors take profits and run, Professional Wealth Management (PWM) Lexis

However, fund managers stress that the market is less than perfect, and there are opportunities to be manipulated. "Many people think our investment universe is just a tightly correlated set of energy and mining stocks, when it actually extends well beyond the primary producers to include downstream processing and parallel value chains in areas like forest products and building materials; we also consider engineers, service companies, shippers and makers of alternative energy equipment," says Ruairidh Stewart, co-manager, Martin Currie Global Resources Fund. "It is often assumed that 'it's all about the oil price', but even oil companies never mind the many other, less correlated areas of our universe can outperform the wider market when the price of the commodity falls through the floor," he explains.

#### US oil production would cause a massive overproduction glut and collapse prices

Derek Brower July 2012; editor of Petroleum Economist, Saudi Arabia steps into the breach HIGHLIGHT: The kingdom's efforts to balance the market are working. It may herald a new era of oil abundance, writes Derek Brower, Lexis

An 'unprecedented' rise in supply North America's unconventional oil sector will lead a vast new swathe of global supply that could lead to a "glut of overproduction and a steep dip in oil prices" and make the Western hemisphere the new centre of gravity in the world's oil sector, according to a report from the Belfer Center for Science and International Affairs at Harvard University. The field-by-field analysis of oil exploration and production projects around the world says that output could rise by 49 million b/d by 2020, or more than twice world demand in 2011, an "unprecedented" increase that has got underway "quite unnoticed". The revival has been "driven by high oil prices, booming investments, private companies' desperate need to restore their reserves, and the misguided but still prevalent perception that oil must become a rare commodity". In 2012 alone, more than $600 billion will be spent worldwide in oil and gas exploration and production, calculates the report's author, Leonardo Maugeri, a former Eni executive. Even after adjusting the potential production growth to account for risk, up to 29 million b/d could be added. Including depletion rates, which Maugeri says have been overestimated and are typically no more than 2-3%, net additions to production could reach 17.6 million b/d by 2020, yielding output of 110.6 million b/d - "the most significant increase in any decade since the 1980s."

#### The impact is Russian growth and stability

Michael Schuman 7-5-2012 ; writes about Asia and global economic issues as a correspondent for TIME in Hong Kong. B.A. in Asian history and political science from the University of Pennsylvania and a master of international affairs from Columbia; “Why Vladimir Putin Needs Higher Oil Prices” http://business.time.com/2012/07/05/why-vladimir-putin-needs-higher-oil-prices/

But Vladimir Putin is not one of them. The economy that the Russian President has built not only runs on oil, but runs on oil priced extremely high. Falling oil prices means rising problems for Russia – both for the strength of its economic performance, and possibly, the strength of Putin himself. Despite the fact that Russia has been labeled one of the world’s most promising emerging markets, often mentioned in the same breath as China and India, the Russian economy is actually quite different from the others. While India gains growth benefits from an expanding population, Russia, like much of Europe, is aging; while economists fret over China’s excessive dependence on investment, Russia badly needs more of it. Most of all, Russia is little more than an oil state in disguise. The country is the largest producer of oil in the world (yes, bigger even than Saudi Arabia), and Russia’s dependence on crude has been increasing. About a decade ago, oil and gas accounted for less than half of Russia’s exports; in recent years, that share has risen to two-thirds. Most of all, oil provides more than half of the federal government’s revenues. What’s more, the economic model Putin has designed in Russia relies heavily not just on oil, but high oil prices. Oil lubricates the Russian economy by making possible the increases in government largesse that have fueled Russian consumption. Budget spending reached 23.6% of GDP in the first quarter of 2012, up from 15.2% four years earlier. What that means is Putin requires a higher oil price to meet his spending requirements today than he did just a few years ago. Research firm Capital Economics figures that the government budget balanced at an oil price of $55 a barrel in 2008, but that now it balances at close to $120. Oil prices today have fallen far below that, with Brent near $100 and U.S. crude less than $90. The farther oil prices fall, the more pressure is placed on Putin’s budget, and the harder it is for him to keep spreading oil wealth to the greater population through the government. With a large swath of the populace angered by his re-election to the nation’s presidency in March, and protests erupting on the streets of Moscow, Putin can ill-afford a significant blow to the economy, or his ability to use government resources to firm up his popularity. That’s why Putin hasn’t been scaling back even as oil prices fall. His government is earmarking $40 billion to support the economy, if necessary, over the next two years. He does have financial wiggle room, even with oil prices falling. Moscow has wisely stashed away petrodollars into a rainy day fund it can tap to fill its budget needs. But Putin doesn’t have the flexibility he used to have. The fund has shrunk, from almost 8% of GDP in 2008 to a touch more than 3% today. The package, says Capital Economics, simply highlights the weaknesses of Russia’s economy: This cuts to the heart of a problem we have highlighted before – namely that Russia is now much more dependent on high and rising oil prices than in the past… The fact that the share of ‘permanent’ spending (e.g. on salaries and pensions) has increased…creates additional problems should oil prices drop back (and is also a concern from the perspective of medium-term growth)…The present growth model looks unsustainable unless oil prices remain at or above $120pb.

#### Russian economic collapse causes global nuclear war

Steven David, January/February 1999;Professor of International Relations and Associate Dean of Academic Affairs at the Johns Hopkins University, FOREIGN AFFAIRS, **,** http://www.foreignaffairs.org/19990101faessay955/steven-r-david/saving-america-from-the-coming-civilwars.html

If internal war does strike Russia, economic deterioration will be a prime cause. From 1989 to the present, the GDP has fallen by 50 percent. In a society where, ten years ago, unemployment scarcely existed, it reached 9.5 percent in 1997 with many economists declaring the true figure to be much higher. Twenty-two percent of Russians live below the official poverty line (earning less than $ 70 a month). Modern Russia can neither collect taxes (it gathers only half the revenue it is due) nor significantly cut spending. Reformers tout privatization as the country's cure-all, but in a land without well-defined property rights or contract law and where subsidies remain a way of life, the prospects for transition to an American-style capitalist economy look remote at best. As the massive devaluation of the ruble and the current political crisis show, Russia's condition is even worse than most analysts feared. If conditions get worse, even the stoic Russian people will soon run out of patience.  A future conflict would quickly draw in Russia's military. In the Soviet days civilian rule kept the powerful armed forces in check. But with the Communist Party out of office, what little civilian control remains relies on an exceedingly fragile foundation -- personal friendships between government leaders and military commanders. Meanwhile, the morale of Russian soldiers has fallen to a dangerous low. Drastic cuts in spending mean inadequate pay, housing, and medical care. A new emphasis on domestic missions has created an ideological split between the old and new guard in the military leadership, increasing the risk that disgruntled generals may enter the political fray and feeding the resentment of soldiers who dislike being used as a national police force. Newly enhanced ties between military units and local authorities pose another danger. Soldiers grow ever more dependent on local governments for housing, food, and wages. Draftees serve closer to home, and new laws have increased local control over the armed forces. Were a conflict to emerge between a regional power and Moscow, it is not at all clear which side the military would support.  Divining the military's allegiance is crucial, however, since the structure of the Russian Federation makes it virtually certain that regional conflicts will continue to erupt. Russia's 89 republics, krais, and oblasts grow ever more independent in a system that does little to keep them together. As the central government finds itself unable to force its will beyond Moscow (if even that far), power devolves to the periphery. With the economy collapsing, republics feel less and less incentive to pay taxes to Moscow when they receive so little in return. Three-quarters of them already have their own constitutions, nearly all of which make some claim to sovereignty. Strong ethnic bonds promoted by shortsighted Soviet policies may motivate non-Russians to secede from the Federation. Chechnya's successful revolt against Russian control inspired similar movements for autonomy and independence throughout the country. If these rebellions spread and Moscow responds with force, civil war is likely.  Should Russia succumb to internal war, the consequences for the United States and Europe will be severe. A major power like Russia -- even though in decline -- does not suffer civil war quietly or alone. An embattled Russian Federation might provoke opportunistic attacks from enemies such as China**.** Massive flows of refugees would pour into central and western Europe. Armed struggles in Russia could easily spill into its neighbors. Damage from the fighting, particularly attacks on nuclear plants, would poison the environment of much of Europe and Asia. Within Russia, the consequences would be even worse. Just as the sheer brutality of the last Russian civil war laid the basis for the privations of Soviet communism, a second civil war might produce another horrific regime.

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#### The United States Federal Government Should Substantially Increase Energy Production for Coal, Oil and Natural Gas in the United States

#### The rhetoric of incentives perpetuates an ethic of narrow self-interest that prevents effective systems of ethics, the assumption is that people will act ethically only if they are first induced to act – it precludes thinking about action for its own ethical merits

**Kaveny, 99** – Notre Dame Law School (Kathleen, “Commodifying the Polyvalent Good of Health Care,” Journal of Medicine and Philosophy, Vol. 24, No. 3, pp. 207-223, online: Taylor and Francis)

Second, one additional way of preserving the non-market aspects of the health care system is not to presume that every one within it acts with market-based motivations. Yet the rhetoric of health care policy is increas-ingly dominated by the language of incentives. Managed care organiza- tions claim to design payment structures to give primary care physicians incentives to behave in a cost-efficient manner, to reduce length of hospi- talization, and to limit referrals to specialists, etc. Those attacking man- aged care speak of incentives to undertreat; those defending it emphasize the fact that the old fee-for-service system incorporated equally objection- able incentives to overtreat. What is the psychology of human decision-making — of professional decision-making — that is presupposed by such emphasis on incentives in the medical setting? Both those who create incentives (managed care or- ganizations) and those who attempt to limit their attractiveness (federal and state regulators) appear to share the assumption that institutions and individuals alike are motivated only by self-interest, which is in turn nar-rowly conceived of as monetary gain. From this vantage, such a motiva- tion for human behavior is neither lamented nor applauded; it is treated as a fact about human nature that must be taken into account in designing adequate health care systems. The achievement of a just health care fi- nancing and delivery system, from this perspective, depends not upon encouraging institutions and the individuals who work within them to adopt more altruistic motivations, or even a broader conception of their own good that includes care for the common good of which they are a part. Instead, it depends upon the ability of managers to harness self-interest effectively, balancing the incentives within the system to achieve the best possible result. Many physicians, nurses, and others who work within the health care field have expressed their discomfort and alienation with the degree to which market practices have encroached upon their professional lives. It is easy to dismiss their disquiet as nostalgia for the money to be made in the heyday of fee-for-service medicine. However, is it not at least possible that such disquiet stems from the fact that they experience the language of incentives as distorting their own motivations in acting? Whether or not they actually succeed, do some health care professionals not at least strive to combat their selfish motivations, to put the well-being of their patients first in some matters, at least some of the time? Moreover, do some such individuals not strive to develop an understanding of their own good that is rich enough to encompass the development of character traits such as competence, fidelity, and compassion? None of these aspirations, none of these complexities of character development, can be expressed in the lan- guage of financial incentives. The opposite of virtue, of course, is vice. How do we describe morally unacceptable human actions and the patterns of motivation that support them? What accounts for the human propensity to do evil in ways both small and large? Ethical systems grounded in specific Western religious traditions frequently draw upon the concept of human sinfulness. Some have developed a rich vocabulary to identify and describe the panoply of vices that human character is capable of exhibiting. On the other hand, the same cannot be said of non-religiously based moral theory. While recent discussions in philosophical ethics have witnessed an explosion of interest in the shape of a virtuous character, they have dedicated far less attention to the patterns of vice that mar human character and distort human rela- tionships. It is difficult to explain the reluctance of secular moral theorists to think about vice. It may be rooted in the fear that devoting too much attention to the nature and causes of vice will quickly and hopelessly entangle secular ethics in religious conceptions of sin and the contested anthropology such conceptions presuppose. Nonetheless, it is imperative that health care eth- icists overcome such scruples if they hope to grapple successfully with problems of medicine and the market. It is only by developing a well- textured account of the vices commonly exhibited by all the participants in the system (patients as well as caregivers and administrators) that we will be able to identify all the temptations to wrongdoing that can be found in today’s health care arena. The psychology of the incentive system dominant in the marketplace assumes that avarice is the essential wellspring of human action. Yet what about lust for power or desire for professional acclaim? What about lazi- ness and irresponsibility? They are all undesirable character traits that we are likely to encounter in a modern bureaucratic context. By refusing to engage in normative evaluations of human desires, the psychology of in-centives also obscures our ability to recognize their problematic nature. Furthermore, by failing to attend to the way in which moral education can shape our desires, incentive psychology drastically curtails our perception of the options available to discourage persons from succumbing to tempta- tions to wrongdoing. From its vantage point, countering such temptations is understood as a task of institutional design entirely external to the moral makeup of the persons who face them. To counter an incentive to over-treat, an astute manager simply builds in to the system an equally if not more powerful incentive to limit treatment.

#### Employing the word incentive suggests that human behavior can be explained in deterministic terms – legitimizing strategies of behavior modificaiton and control – this turns their entire aff because it presumes that it is legitimate for the government to manipulate the populace. Rejecting the use of incentives rhetoric is vital to reconceptualizing the social order

**DiNardo, 05** – professor of economics at the University of Michigan (John, “A Review of Freakonomics”, 12/10, <http://www.noapparentmotive.org/papers/DiNardo_on_Freakonomics.pdf>)

Despite being a book that eschews a “unifying theme”, Freakonomics has at least one centralargument: “incentives matter” – on the other hand, it is not clear what an incentive “is.” The helpful index to the book lists the following: incentives, bright line versus murky, as a cornerstone of modern life, criminal, definitions of, discovery and understanding, economic, of experts, invention and enactment of, moral, negative versus positive, power of, of real estate agents, schemesbased on, of schoolteachers, social, study, tinkering with, trade-offs inherent in.

The authors discuss several types of incentives: economic, social, and moral which they defineas “simply a means of urging people to do more of a good thing and less of a bad thing. [myemphasis]” As the authors are aware (they’ve discussed the issue in their blog and elsewhere) the term incentive is a very elastic one. My qualm is that it is so elastic as to be a hindrance to clear thinking.

In Dubner and Levitt’s hands, the assertion that incentives are the “cornerstone of modern life” often comes off as a two part tautology. The first part of the tautology is: “when incentives matter, they matter.” The second part of the tautology is that when incentives don’t matter, it is because of “moral incentives”

Despite it’s widespread usage, I’d like to take this opportunity to lobby (unsuccessfully for certain!) for the (at least temporary) banishment of the term “moral incentive”. The way the term incentive is typically used by economists evokes, for me at least, a kind of Skinnerian behaviorism which in popular writing was most cogently demolished by Chomsky (1971), (although still alive among some social scientists. See footnote 49.) It is easy to get confused about whether negative and positive incentives, for example, are merely synonyms for the Skinnerian notions of negative and positive reinforcement.63

Like much else in Freakonomics, Dubner and Levitt do not take the framework that seriously. Skinner’s very explicit and detailed discussion, by contrast, is so clear that it has always struck me as a argument of the reductio ad absurdum sort (Skinner 1957).

Nonetheless, the term moral incentives seems to elide an important distinction between an action I (or a government, or a business) might take to affect a person’s behavior – a manipulation if you will – and an aspect of a person’s internal state, in what in earlier times a social philosopher might have described as a person’s “soul” or “beliefs” or “convictions.”

Consider one of their illustration of moral incentives (page 21) – “when the government asserts that terrorists raise money by selling black–market cigarettes that acts as a jarring moral incentive.” If the persons in the government are making a well–informed, truthful, and salient claim why not merely call it information? If the claim is otherwise, why not refer to it as propaganda? (or marketing in more polite language.) Calling it “moral incentives” seems to me to conflate two very different things: deliberate manipulations outside the person, with inner states (unless one is a Skinnerian in which the inner states are infinitely flexible.)

Even the designation of moral incentives as “negative” or “positive” seems to conflate things “external” to a person with a person’s inner states. For example, the practice of the Roman Catholic church in drawing up an index of “prohibited” books could be described as an “negative moral incentive” to not engage in reading such books, although to take a personal example, the Index Librorum Prohibitorum (despite its official demise) provided me with a wonderful reading list when I was in high school (over the objections of the nuns who taught me.) Isn’t it just plainer to say that often “incentives” don’t matter or that the attempts of others to control what we think or believe sometimes (thankfully) don’t work? More optimistically, economists or those in a position to do so have only the crudest tools and knowledge to manipulate us?

Perhaps I read more into the use of the word incentives than is there. However consider Dubner and Levitt’s description of the “typical economist’s view” of incentives:

Economists love incentives. They love to dream them up and enact them, study them, and tinker with them. The typical economists believes the world has not yet invented a problem that he can not fix if given a free hand to design the proper incentive scheme. His solution may not always be pretty – it may involve coercion or exorbitant penalties or the violation of civil liberties – but the original problem, rest assured, will be fixed. An incentive is a bullet, a lever, a key: an often tiny object with astonishing power to change a situation.

In this respect, I am apparently closer to the typical linguist than I am to the typical economist. Consider this critique of Skinner’s discussion of the implications of operant condition for human behavior:

Humans are not merely dull mechanisms formed by a history of reinforcement and behaving predictably with no intrinsic needs apart from the need for physiological satiation. Then humans are not fit subjects for manipulation, and we will seek to design a social order accordingly. (Chomsky 1971)

### 1nc k

#### The Aff is confused –nature exists – however, what the aff is describing is not nature– the 1ac writes a map with no reference.

Estrin, ’10 (Marc, 7/29/11, *The Genius of Jean Baudrillard*, http://theragblog.blogspot.com/2010/06/marc-estrin-genius-of-jean-baudrillard.html)

On the first page of Simulations, Baudrillard cites a tale by Borges in which "the cartographers of the Empire draw up a map so detailed that it ends up exactly covering the territory." (1) But these days, it is no longer a question of maps and territories. Something has disappeared: the sovereign difference between them. If there is any distinction at all, it is that it is the territory whose shards are slowly rotting across the map, and not vice versa. So **all we have now is the map**, the sign, a most "ductile" environment. This is the age of simulation -- the generation by models of a "real" without origin or reality. Hyperreality. "The territory no longer precedes the map, nor survives it. Henceforth it is **the map** that **precedes the territory**." (2) If you think it's easy to tell real from fake, Baudrillard challenges you to try staging a fake holdup. Be sure to check that your weapons are harmless, and take the most trustworthy hostage, so that no life is in danger....Demand ransom, and arrange it so that the operation creates the greatest commotion possible -- in brief, stay close to the "truth," so as to test the reaction of the apparatus to a perfect simulation. But you won't succeed: the web of artificial signs will be inextricably mixed up with real elements (a police officer will really shoot on sight; a bank customer will faint and die of a heart attack; they will really turn the phony ransom over to you)...(39) And here, Baudrillard elucidates the dynamic nature of the interaction of reality and simulation: -- In brief, you will unwittingly find yourself immediately in the real, one of whose functions is precisely to devour every attempt at simulation, to reduce everything to some reality -- that's exactly how the established order is... (39) If reality is to seek in simulation the same order of reality, then the destiny of reality is inevitably to become simulation. This dynamic would explain the "collective hysteria" of production and overproduction, consumption and overconsumption in Western culture. What society seeks through production, and overproduction, is the restoration of the real **which escapes it**. That is why contemporary "material" production is itself hyperreal. (44) It also explains the itch for fascism that we see demonstrated in the public desire for a president to "act presidential." It doesn't matter what he does: **the mere assertion of power** satisfies "a collective demand for signs of power -- a holy union which forms around the disappearance of power." (45) It further explains the movement to "end welfare as we know it," and get single mothers working, even if they cannot afford to take care of their children, and even if government solutions (short of abandonment) are bound to cost more than welfare. "There is a demand for work exactly proportional to the loss of stake in the work process." (47) How to cope with this unholy coupling of reality and sign? The answer seems to be to assume nothing about the reality of any reality. Everything is true. All realities are **exchangeable and equivalent**. Baudrillard gives the example of a hot topic at the time he was writing: urban bombings (presented as leftist) terrorizing Germany and Italy, but equally applicable to many "terrorist" and false-flag attacks today. Is any given bombing in Italy the work of leftist extremists, or of extreme right-wing provocation, or staged by centrists to bring every terrorist extreme into disrepute and to shore up its own failing power, or again, is it a police-inspired scenario in order to appeal to public security? All this is equally true, and the search for proof, indeed the objectivity of the fact does not check this vertigo of interpretation. We are in a logic of simulation which has **nothing to do with the logic of facts**... (31)

#### They built Disney World – the map the 1ac wrote is meant for nothing more than intellectual tourism – this writes a script for the way the planet ought to be and annihilates [it’s?] uniqueness and singularity.

**Baudrillard, ’01** (Jean, *Dust Breeding*, http://www.egs.edu/faculty/jean-baudrillard/articles/dust-breeding/)

Destiny – modern man is left with an endless experimentation of himself

Our reality has become experimental. Without destiny, modern ~~man~~ is left with an endless experimentation of ~~himself~~. Let's take two recent examples. The first one, the Loft Story show, is a media illusion of live reality. The second one, the case of Catherine Millet’s book, is a phantasmatic illusion of live sex. The Loft show has become a universal concept: a human amusement park combined with a ghetto, solitary confinement (huis-clos), and an Angel of Death. The idea is to use voluntary seclusion as a laboratory for synthetic conviviality, for a telegenetically modified society. In this space, where **everything is meant to be seen** (as in "Big Brother", other reality-TV shows, etc.), we realize that there is nothing left to see. It becomes a mirror of dullness, of nothingness, on which the disappearance of the other is blatantly reflected (even though the show alleges different objectives). It also reveals the possibility that human beings are fundamentally not social. **This space becomes the equivalent of a "ready-made**" just-as-is (telle quelle) transposition of an "everyday life" that has already been trumped by all dominant models. It is **a synthetic banality, fabricated in closed circuits and supervised by a monitoring screen**. In this sense, the artificial microcosm of the Loft Story is similar to Disneyland which gives the illusion of a real world, a world out-there, whereas both Disney's world and the world outside of it are mirror images of one another. All of the United States is (in) Disneyland. And we, in France, are all inside the Loft. No need to enter reality’s virtual reproduction. We are already in it. The televisual universe is merely a holographic detail of the global reality. Even in our most mundane activities we are deep into experimental reality. And this explains our fascination with immersion and spontaneous interactivity. Does it mean that it is all pornographic voyeurism? Not at all. Sex is everywhere else to be found, but that's not what people want. What people deeply desire is a spectacle of banality. This spectacle of banality is today's true pornography and obscenity. It is the obscene spectacle of nullity (nullité), insignificance, and platitude. This stands as the complete opposite of the theater of cruelty. But perhaps there is still a form of cruelty, at least a virtual one, attached to such a banality. At a time when television and the media in general are less and less capable of accounting for (rendre compte) the world's (unbearable) events, they rediscover daily life. They discover existential banality as the deadliest event, as the most violent piece of information: the very location of the perfect crime. Existential banality is the perfect crime. And people are fascinated (but terrified at the same time) by this indifferent "nothing-to-say" or "nothing-to-do," by the indifference of their own lives. Contemplating the Perfect Crime --banality as the latest form of fatality-- has become a genuine Olympic contest, the latest version of extreme sports. What makes it worse is the fact that the public is mobilized as the judge of all this. The public has become Big Brother. We are well beyond panopticism, beyond visibility as a source of power and control. It is no longer a matter of making things visible to the external eye. It is rather a question of making things transparent to themselves, through **the diffusion of control into the masses**, a mode of control which by the same token erases the marks of the system. Thus, the audience is involved in a gigantic exercise of negative counter-transference (contre-transfert), and this is once again where the dizzying attraction of this kind of spectacle comes from. In fact, all this corresponds to the inalienable right or desire to be nothing and to be regarded as such. There are two ways to disappear. Either you demand not to be seen (the current issue with image rights); or you turn to the maddening exhibitionist display of your insignificance. You make yourself insignificant in order to be seen as such. This is the ultimate protection against the need to exist and the duty to be oneself. But this situation also creates the contradictory demand to simultaneously not be seen and to be perpetually visible. Everyone must have it both ways. No ethic or law can solve this dilemma. There is no possibility to adjudicate between the unconditional right to see and the unconditional right not to be seen. Complete information is a basic human rights requirement. And this necessity brings with it the idea of forced visibility, including the right to be over-exposed by the media. Foucault used to refer to self-expression as the ultimate form of confession. Keeping no secret. Speaking, talking, endlessly communicating. This is a form of violence which targets the singular being and ~~his~~ secrecy. It is also a form of **violence against language**. In this mode of communicability, language loses its originality. Language simply becomes a medium, an operator of visibility. It has lost its symbolic and ironic qualities, **those which make language more important than what it conveys**. The worst part of this obscene and indecent visibility is the forced enrollment, the automatic complicity of the spectator who has been blackmailed into participating. The obvious goal of this kind of operation is to enslave the victims. But the victims are quite willing. They are rejoicing at the pain and the shame they suffer. Everybody must abide by society's fundamental logic: interactive exclusion. Interactive exclusion, what could be better! Let’s all agree on it and practice it with enthusiasm! If everything ends with visibility (which, similar to the concept of heat in the theory of energy, is the most degraded form of existence), the point is still to make such a loss of symbolic space and such an extreme disenchantment with life an object of contemplation, of sidereal observation (sidération), and of perverse desire. "While humanity was once according to Homer an object of contemplation for the Gods, it has now become a contemplation of itself. Its own alienation has reached such a degree that humanity’s own destruction becomes a first rate aesthetic sensation" (Walter Benjamin). Everywhere the experimental takes over the real and the imaginary. Everywhere, principles of scientific evidence and verification are introduced. Under the scalpel of the camera, and without recourse to any symbolic language or context, **we are vivisecting and dissecting social relations**. The case of Catherine Millet is another example of experimental reality, another type of vivi-sexion. In her book, the sexual imaginary is blown away. All that’s left is a principle of unlimited verification of sexual operations. It is a mechanism which is no longer sexual. A double misinterpretation is taking place. The idea of sexuality is turned into the ultimate reference. Whether it is repressed or it is displayed, sexuality is at best nothing more than a hypothesis. It is incorrect to take a hypothesis for a truth or a solid reference. It may well be that the sexual hypothesis is nothing more than a fantasy. In any case, it is through its repression that sexuality has gained such a strange power of attraction. Once it is played out, sexuality loses its postulated quality. Hence, it is absurd and misplaced to act it out and to systematically call for sexual "liberation." One never liberates a hypothesis. And how sad is the idea of demonstrating sexuality through the sexual act! As if displacements, deviations, transfers, and metaphors had nothing to do with sex. Everything is in the filter of seduction, in détournement. Not the seduction in sex and desire, but the seduction of playing with sex and desire (le jeu avec the sexe et le désir). This is exactly what makes impossible the idea of "live sex." The concepts of live death or live news are just as naively naturalist. They are all linked to the pretentious claim that everything can happen in the real world, that everything craves to find its place inside an all encompassing reality. After all, this is the essence of power too: "**The corruption of power is to inscribe into reality what was only found in dreams**."

#### Their desire to isolate and expel social violence and the view of Earth as a passive resource feeds into a virulent form of opposition that produces a self-defeating violence – the system of values the 1ac maps will annihilate its own subjects – the only alternative is the logic of exception.

Baudrillard, ‘08 (Jean Baudrillard, *Present Considerations: The uncertainty of all value* *systems*, International Journal of Baudrillard Studies <http://www.ubishops.ca/baudrillardstudies/vol5_1/v5-1-article2-petit.html>) – Ellipses to correct a typo

Baudrillard: It's a diagnosis. Our society has expelled violence (at the same time as it has expelled evil, illness, negativity and death – I don't mean it has eliminated them, but it has expelled them **from its system of values**). All forms of wildcat, spontaneous violence, historical and political, have been stifled or neutralized. Just as all forms of concrete freedom are being absorbed into the only freedom which remains, the freedom of the market and of market values, and the assumption of these into glob­alism, so all forms of violence are reduced and muzzled to the exclusive advantage of the terrorist and police-style violence of the new world order. The system has the monopoly of violence: a monopoly of the extermination of any singularity, any negativity, of death itself, and of real violence in the virtual violence of generalized pacification, fundamentalist [intégriste] violence (the only violence, that of the sys­tem, not that of terrorists, which remains small-scale and blind). Against this, new forms of violence are arising; or, rather, new forms of anony­mous, anomalous virulence – a reactive, reactional vehemence against the dominant thrust of society, **against any dominant system** – which is no longer a historical vio­lence of liberation, but **a violence from the confines** of a sacrificed destiny, from the confines of a sacrificed symbolic order, from the confines of the perfect crime or, in other words, of total integration (the integrism of the system) and even **of the democratic aspects of the system** (enforced liberation, enforced interactivity in all its forms) – that is to say, **the absence of destiny**. This new violence is no longer directed against the absence of freedom and against oppression, but against the absence of destiny and the democratic leukaemia of all our cells. Petit: An absence like that ,exhibited by H.B., the hostage-taker at the Neuilly Infants’ school, in 1995. In a book which – sadly – passed unnoticed, Alain Brossat Wrote of him: What the public will hot forgive the “monster” is his directly exhibiting ... what is basi­cally at stake in the crisis: not the economy, but living beings, not objects, but human relations, not car sales figures, but whether or not the life-world is fit to live in ...5 Baudrillard: He's right, because that violence on the part of H.B. or Florence Rey6 is no longer a political violence with a determinate objective (political violence has been absorbed and transformed into transpolitical energy for the benefit of the sys­tem). It's a violence cut off from its object and turning back against that object itself – against the political and the social. It's no longer anarchistic or revolution­ary, it's worse because its objective is no longer to set the system to rights or to transform the world by violently and historically. bringing something new into being; it takes the system itself as its object, aiming at systematic destabilization. It's not interested in the system's internal contradictions; it targets the very principle of the social and the political. It spontaneously takes a viral, temperamental form. It's an esoteric form which is its own justification, an exclusive violence which is merely the correlative of a system of exclusion. It answers the systematic exclusion our society practices by even more exclusion, cutting itself off from the social world by indifference or hatred. For it may be aggravated or apathetic: it may take the form of **an active terrorism or** that of **the inertia and irrepressible conformism of the masses**. No longer having ,either **object or objective**, it willfully (like all forms of virus arid virulence) **confuses the murderer and the victim**, **in an immense Stockholm syndrome**, precisely reflecting in this the system itself and its “perfect crime” – that is to say, its current ideal operation in which we are all simultaneously victims, murderers and accomplices (this is the truth of consensus, interactivity, and every­thing cycling back on itself). Taking a lofty, otherworldly view of the whole process – the process of the system and that of the violence which opposes it while reflecting its characteristic features (exclusion, autarky, anomaly, virulence) – one might conclude that it's an immense suicidal process, suicide being the perfect crime, inasmuch as in that act **murderer and victim are one**. In the history of humanity, then, the various lethal forms of violence are com­ing increasingly to resemble one another, as the terms are mingled and the roles merged (a confusion opened up irreversibly by the nuclear and by all the forms of complicity in pollution and death) to the point of wiping out, in the logical func­tioning of the system, any demarcation line between accomplice and victim (as any demarcation line between subject and object is being wiped out in philosophy and the sciences), and giving the image of a collective suicide, in which the attribution of responsibility becomes entirely secondary. Petit: But the threshold you speak of at which we break with this can, it seems, have only a clandestine existence. How are we to go on living in your world, our world, without being compromised? Baudrillard: **The only exception** is singularity. Singularity is the singularity of that anom­alous violence I'm referring to, the singularity which stands opposed to real violence, to the violence of any reality principle. For the basic violence, the basic deception, is the violence of the reality principle. Now, the system produces more and more reality, more and more of the social, more and more politics, more and more sex, more and more information, etc. That is its own peculiar violence. But at the same time, and in the same process, it **paradoxically produces more and more singularity** (of beings, of unidentified, refractory, excluded forces, which have no need of it to exist and are definitively exiled from the system). The example of the social sphere is fantastic. One day soon, that sphere will be fully realized, and the only people remaining will be the “excluded”. In a perfectly conformist sociality, only anomalous individuals and desocialized categories will be left, and they **won't** even **have any relationship**, dialectical or otherwise, **with** the social **institutions**. This is what's happening today at an increasingly rapid rate. As the social sphere is completed, with the discourse on “the social” playing its part, it expels everyone from the game (the homeless, the unemployed, vagrants, etc., and all the desocialized categories one after the other). In the end, the only people left in die[the] social sphere will be sociologists and social workers, all those for whom the “social” their stock in trade, and they will be left grappling with their object, which, though fully realized; has now become virtual. Retrospectively, it will be seen that the social sphere was only ever invented as a place to park the have-nots, and that today they're even being gradually expelled from there, like the Indians being driven off their reservations, thus allowing the better-off classes to occupy the social sphere as a second home. A strange contradictory movement, this, in which there's a growing mismatch between an idealistic, voluntaristic, expert dis­course, in which everything's getting better and better by pressing on regardless with imaginary solutions, and the real (if I dare use the term) state of affairs, in which everything's getting inexorably worse. The most disturbing thing is that the two are developing contradictorily and in, parallel, with the same irresistible dynamism. Flourishing social provision and galloping exclusion. Educational progress and mental, retardation. Perhaps there isn't even a contradiction or distor­tion here, merely a twist in the, same phenomena? This distortion can be seen everywhere: one day the construction of Europe will finally be completed, and there will really be no countries left to be part of it; it will in fact be constructed by successive exclusions and extraditions. It might even be the case, in the end, that when globalism has fully taken shape, and the cycle of information is perfectly inte­grated, there won't be anyone left on the networks any more. This is the perfect rule – the one where **there are only exceptions**. The perfect crime: the one in which there are only victims and accomplices, but no murderers (our present con­dition). The perfect social sphere: the one in which everyone is among “the excluded”. Perfect communication (the ecstasy of communication): when no one speaks to anyone any more.

### case

#### Util 1st

Bok, 1988 (Sissela Bok, Professor of Philosophy, Brandeis, Applied Ethics and Ethical Theory, Ed. David Rosenthal and Fudlou Shehadi, 1988)

The same argument can be made for Kant’s other formulations of the Categorical Imperative: “So act as to use humanity, both in your own person and in the person of every other, always at the same time as an end, never simply as a means”; and “So act as if you were always through actions a law-making member in a universal Kingdom of Ends.” No one with a concern for humanity could consistently will to risk eliminating humanity in the person of himself and every other or to risk the death of all members in a universal Kingdom of Ends for the sake of justice. To risk their collective death for the sake of following one’s conscience would be, as Rawls said, “irrational, crazy.” And to say that one did not intend such a catastrophe, but that one merely failed to stop other persons from bringing it about would be beside the point when the end of the world was at stake.For although it is true that we cannot be held responsible for most of the wrongs that others commit, the Latin maxim presents a case where we would have to take such a responsibility seriously—perhaps to the point of deceiving, bribing, even killing an innocent person, in order that the world not perish.

#### Inanimate objects aren’t as valuable as human life, to say so is also human centric and non-falsifiable

Bobertz 97 (Bradley C., Assistant Professor of Law, University of Nebraska College of Law. “Of Nature and Nazis” HeinOnline) MFR

The term “deep ecology” derives from Arne Naess’s 1973 essay on the differences between “shallow” and “deep” approaches to environmental protection. Essentially, the shallow approach centers on human needs and seeks incremental reform without significantly altering patterns of resource consumption, whereas the deep approach takes a bio-centric view of man’s relationship with nature and encourages basic changes in lifestyle. Never very well-defined in the first place, and also never holding itself out as a “movement” in the political sense, deep ecology has evolved into a wide range of concerns that most scholars would group under the subject of “environmental ethics.” Apart from the political dangers Ferry associates with deep ecology, he believes the philosophy suffers from a fundamental self-contradiction. The argument that natural objects can possess their own interests strikes Ferry as “one of the most absurd forms of anthropomorphism.” We cannot “think like a mountain,” to use Aldo Leopold’s famous phrase, because, quite obviously, we are not mountains. Recalling Sierra Club v. Morton, the famous standing case involving a proposal to construct a ski resort in California’s Mineral King valley, Ferry claims that environmentalists “always suppose that the interests of objects (mountains, lakes and other natural things) are opposed to development. But how do we know? After all, isn’t it possible that Mineral King would be inclined to welcome a ski slope after having remained idle for millions of years? Yet few people, including the writers Ferry labels as deep ecologists, would disagree with the fact that recognizing value in natural objects is an act of human cognition. Perhaps a person suffering from profound psychosis might claim the ability to understand how a mountain “thinks,” but the writers Ferry criticizes do not advance such bizarre claims. For deep ecologists and environmental ethicists, phrases such as “think like a mountain” are metaphorical and heuristic, not literal and agenda-setting.

#### And if you try to mix non-humanist ethics into politics, it is the definition of facism, or else you cede the political

Bobertz 97 (Bradley C., Assistant Professor of Law, University of Nebraska College of Law. “Of Nature and Nazis” HeinOnline) MFR

According to Ferry, a far graver problem with deep ecology lies in its appeal to those who might translate a nature-centered ideology into coercive political action. By promoting the idea that nature has intrinsic value, deep ecologists necessarily promote an anti-human, anti-technology, and anti-modern worldview, Ferry believes. If we assert that humans are merely ‘part’ of the natural order, our position in that order must be a humble one: The entire Cosmos may well be assigned a positive coefficient higher than that of humankind itself, since in the hierarchy of beings it constitutes the primary condition: nature can do without men, but not vice versa, which is why the idea of a “preference for nature” finds itself gradually legitimized as all in all the most logical metaphysical horizon of deep ecology. For this reason, Ferry argues, deep ecology’s preference for nature signifies a profoundly antihuman and antidemocratic viewpoint. Rooted in deep ecology’s antihumanist “master plan” is a special hatred of technology. Citing the morality tales of Frankenstein’s Monster and the Sorcerer’s Apprentice, Ferry claims these stories hold a special magnetism for deep ecologists. Technology is the means by which humans came to dominate (and, in part, to devastate) the planet. But even if we assume that technology by itself is ethically neutral, its historical tendency to produce unforeseen consequences places it in a suspicious light. Because we cannot control the outcomes of our own technological genius, “we are no longer masters of our own mastery,” and, like Dr. Frankenstein or the Sorcerer’s apprentice, we become victims of our own creations. According to Ferry, such an antitechnological bias can lead to antidemocratic politics centering on disillusionment with the modern world itself. As Ferry concludes, “in all cases, the deep ecologist is guided by a hatred of modernity, by hostility toward the present.” Such a reflexive renunciation of technology and humanism leads to coercive political models, Ferry believes, because of its allure to those seeking to recover a lost (or to create a future) utopian ideal: At a time when the mourning of utopias seems to be popular even among those who had never cared for them to begin with, it [deep ecology] opens a new space for action and reflection. It has little of everything: science and morality, epistemology and philosophy, cosmology and mysticism. Enough to open new horizons to a militant corps lacking reasonable places to invest its energies. The question of who belongs to this “militant corps” of ecological fundamentalists is left unclear. Though Ferry quotes a 1979 Greenpeace editorial and a rhetorical question posed by William Aiken, he is hard-pressed to show that deep ecology has an overtly political program. This is unsurprising, since the deep ecologists themselves reject politics as a mean for implementing their ideas. They see the dangers of government authoritarianism just as clearly as their critics, and in the main seek to dissociate themselves from political programs. Arne Naess, for example, fought in the Norwegian resistance movement during the Nazi occupation and had first-hand experience with the dangers of utopian visionaries advancing their views through political force. Naess criticizes traditional anthropocentrism as much for its impact on human values as for its effect on nature. For Naess, the idea of “biospherical egalitarianism” could be asserted only “in principal” because its actual practice might lead to “killing, exploitation, and suppression.” Explicitly rejecting the notion deep ecology should be fulfilled through government coercion, Naess argues for the “maximization of personal intiatives” and a “hard fight against bureaucracy,” hardly the words of an autocrat in the making. Similarly, Bill Devall – who along with George Sessions is most closely associated with deep ecology in the United States – denounced the use of governmental power to advance the movement’s aims: There is no political party of “deep ecology,” no cadre of political revolutionaries. This is not an appropriate approach for deep ecologists. No frontal confrontations with reformist environmentalists or with the dominant social/political order is desired. Deep ecology is not an attempt to add one more ideology in the crowded field of modern ideologies. If deep ecologists distance themselves from politics, what are they really working toward? Virtually all the writers Ferry identifies as deep ecologists see their mission as fostering a “progressive” evolution in ethical consideration. They believe the scope of human morality will expand over time from self, family, tribe, nation, ethnic and religious minorities, to nonhuman speicies and ultimately the biosphere itself. Aldo Leopold called this progression the “ethical sequence” and variations on this idea appear with regularity in the wok of deep ecologists and others writing in the field of environmental ethics. Yet even if deep ecologists seek merely to expand our moral field of vision, we are still left with the question of what people should do about their insights. For the most part, deep ecologists are coy on this matter. They hope, along with Naess, that by changing the way people think about nature, the need for government intervention will lessen. But this seems like wishful thinking. We cannot expect the teachings of deep ecology to affect as many people that the ideal of sustainable development will be realized without the need for law. At times, deep ecologists seem to want it both ways, to have a fundamental change in culture without engaging in the dirty work of politics. It is as if culture and law occupy clean, non-overlapping subsets of human experience, and that changes in culture can occur without either promptings by or reflections in the law. On this point, deep ecologists appear naïve. Regulatory edicts abound in environmental law. We have environmental laws en mass, ad nauseam and these laws, like most forms of social control, are coercive to the extent they force obedience by otherwise unwilling subjects. Yet at the same time these laws simply reflect democratic political choice, or as Garret Hardin put it, “mutual coercion, mutually agreed upon,” the essence of a theoretical social contract.

#### Their ethics results in temporal parochialism that makes their values hopeless against the humanist perspective

Manson 9 (Neil A., philosopher at the University of Mississippi, “NECESSARY ANTHROPOCENTRISM” http://www.environmentalphilosophy.org/ISEEIAEPpapers/2009/Manson.pdf) MFR

I. THE PLANETARY PERSPECTIVE To be anthropocentric is to regard human beings as of primary importance in the grand scheme of reality. If being ethical requires that we not be anthropocentric, then what should we be instead? To answer “non-anthropocentric” is not to give much real guidance. For our limited minds to reason at all, we must adopt some perspective or other. One standard offering – perhaps the dominant offering in environmental philosophy today – is the perspective of the Earth as a whole. Deep ecologists, biocentrists, land ethicists, environmental holists – whatever the label, all share the belief that taking the planetary perspective is the key to following an environmental ethic. The problem with taking the planetary perspective is that from it, massive environmental damage within the next few centuries can be written off as just a blip on the screen. Suppose we cook and poison the planet, dramatically reducing biodiversity as a result (and perhaps destroying ourselves too). The result many millions of years later would be a biosphere re-set to a different equilibrium, but one with life and biodiversity comparable to that of the planet prior to our degradation of it. To say the biosphere as it is here and now is more valuable than the future one is to be guilty of “temporal parochialism,” to borrow a term from Callicott.3 Considering our time as but an infinitesimal moment in the three and onehalf billion year tenure of life on planet Earth, the present tendency of man to extirpate and eventually extinguish other species and take over their habitats for himself and his domesticated symbionts might be viewed quite disinterestedly as but a brief transitional stage in the Earth’s evolutionary odyssey. Non-human life will go on even under the worst possible anthropogenic destructive scenario presently conceivable, novel species will radiate anew, and novel ecosystems will mature. The new Age (of Insects, perhaps) will eventually be just as diverse, orderly, harmonious, and stable, and thus no less good than our current ecosystem with its present complement of species. [Callicott 303-4] From this observation William Grey [463] concludes that “the grand perspective of evolutionary biology provides a reductio ad absurdum of the cluster of nonanthropocentric ethics which can be found under the label ‘deep ecology’.” There have been far more traumatic disruptions to the planet than any we can initiate. From a long-term planetary perspective, [claiming human activity is driving the ecosystem towards collapse] is alarmist nonsense….From a planetary perspective, we may be entering a phase of mass extinction of the magnitude of the Cretaceous. For planet Earth that is just another incident in a four and a half billion year saga. Life will go on – in some guise or other. [Grey 468]4 From these and similar considerations, Grey concludes [473] that “the attempt to provide a genuinely non-anthropocentric set of values seems to be a hopeless quest.”

## 2nc

### fw

#### Decisionmaking skills gained from debate are key to problem solving in all facets of life—outweighs the case

**Steinberg & Freeley 8** \*Austin J. Freeley is a Boston based attorney who focuses on criminal, personal injury and civil rights law, AND \*\*David L. Steinberg , Lecturer of Communication Studies @ U Miami, Argumentation and Debate: Critical Thinking for Reasoned Decision Making pp. 9-10

If we assume it to be possible without recourse to violence to reach agreement on all the problems implied in the employment of the idea of justice we are granting the possibility of formulating an ideal of man and society, valid for all beings endowed with reason and accepted by what we have called elsewhere the universal audience.14

I think that the only discursive methods available to us stem from techniques that are not demonstrative—that is, conclusive and rational in the narrow sense of the term—but from argumentative techniques which are not conclusive but which may tend to demonstrate the reasonable character of the conceptions put forward. It is this recourse to the rational and reasonable for the realization of the ideal of universal communion that characterizes the age-long endeavor of all philosophies in their aspiration for a city of man in which violence may progressively give way to wisdom.13

Whenever an individual controls the dimensions of" a problem, he or she can solve the problem through a personal decision. For example, if the problem is whether to go to the basketball game tonight, if tickets are not too expensive and if transportation is available, the decision can be made individually. But if a friend's car is needed to get to the game, then that person's decision to furnish the transportation must be obtained.

Complex problems, too, are subject to individual decision making. American business offers many examples of small companies that grew into major corporations while still under the individual control of the founder. Some computer companies that began in the 1970s as one-person operations burgeoned into multimillion-dollar corporations with the original inventor still making all the major decisions. And some of the multibillion-dollar leveraged buyouts of the 1980s were put together by daring—some would say greedy—financiers who made the day-to-day and even hour-to-hour decisions individually.

When President George H. W. Bush launched Operation Desert Storm, when President Bill Clinton sent troops into Somalia and Haiti and authorized Operation Desert Fox, and when President George W. Bush authorized Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq, they each used different methods of decision making, but in each case the ultimate decision was an individual one. In fact, many government decisions can be made only by the president. As Walter Lippmann pointed out, debate is the only satisfactory way the exact issues can be decided:

A president, whoever he is, has to find a way of understanding the novel and changing issues which he must, under the Constitution, decide. Broadly speaking ... the president has two ways of making up his mind. The one is to turn to his subordinates—to his chiefs of staff and his cabinet officers and undersecretaries and the like—and to direct them to argue out the issues and to bring him an agreed decision…

The other way is to sit like a judge at a hearing where the issues to be decided are debated. After he has heard the debate, after he has examined the evidence, after he has heard the debaters cross-examine one another, after he has questioned them himself he makes his decision…

It is a much harder method in that it subjects the president to the stress of feeling the full impact of conflicting views, and then to the strain of making his decision, fully aware of how momentous it Is. But there is no other satisfactory way by which momentous and complex issues can be decided.16

John F. Kennedy used Cabinet sessions and National Security Council meetings to provide debate to illuminate diverse points of view, expose errors, and challenge assumptions before he reached decisions.17 As he gained experience in office, he placed greater emphasis on debate. One historian points out: "One reason for the difference between the Bay of Pigs and the missile crisis was that [the Bay of Pig\*] fiasco instructed Kennedy in the importance of uninhibited debate in advance of major decision."18 All presidents, to varying degrees, encourage debate among their advisors.

We may never be called on to render the final decision on great issues of national policy, but we are constantly concerned with decisions important to ourselves for which debate can be applied in similar ways. That is, this debate may take place in our minds as we weigh the pros and cons of the problem, or we may arrange for others to debate the problem for us. Because we all are increasingly involved in the decisions of the campus, community, and society in general, it is in our intelligent self-interest to reach these decisions through reasoned debate.

#### Fairness is key to fun—and that’s a good thing

Marc **Prensky**, **2001**. Internationally acclaimed speaker, writer, consultant, and designer in the critical areas of education and learning, Founder, CEO and Creative Director of games2train.com, former vice president at the global financial firm Bankers Trust, BA from Oberlin College, an MBA from Harvard Business School with distinction and master's degrees from Middlebury and Yale. “Fun, Play and Games: What Makes Games Engaging,”Digital Game-Based Learning, www.marcprensky.com/writing/Prensky%20-%20Digital%20Game-Based%20Learning-Ch5.pdf.

So fun — in the sense of enjoyment and pleasure — puts us in a relaxed, receptive frame of mind for learning. Play, in addition to providing pleasure, increases our involvement, which also helps us learn. Both “fun” and “play” however, have the disadvantage of being somewhat abstract, unstructured, and hard-to-define concepts. But there exists a more formal and structured way to harness (and unleash) all the power of fun and play in the learning process — the powerful institution of games. Before we look specifically at how we can combine games with learning, let us examine games themselves in some detail. Like fun and play, game is a word of many meanings and implications. How can we define a game? Is there any useful distinction between fun, play and games? What makes games engaging? How do we design them? Games are a subset of both play and fun. In programming jargon they are a “child”, inheriting all the characteristics of the “parents.” They therefore carry both the good and the bad of both terms. Games, as we will see, also have some special qualities, which make them particularly appropriate and well suited for learning. So what is a game? Like play, game, has a wide variety of meanings, some positive, some negative. On the negative side there is mocking and jesting, illegal and shady activity such as a con game, as well as the “fun and games” that we saw earlier. As noted, these can be sources of resistance to Digital Game-Based Learning — “we are not playing games here.” But much of that is semantic. What we are interested in here are the meanings that revolve around the definition of games involving rules, contest, rivalry and struggle. What Makes a Game a Game? Six Structural Factors The Encyclopedia Britannica provides the following diagram of the relation between play and games: 35 PLAY spontaneous play organized play (GAMES) noncompetitive games competitive games (CONTESTS) intellectual contests physical contests (SPORTS) Our goal here is to understand why games engage us, drawing us in often in spite of ourselves. This powerful force stems first from the fact that they are a form of fun and play, and second from what I call the six key structural elements of games: 1. Rules 2. Goals and Objectives 3. Outcomes & Feedback 4. Conflict/Competition/Challenge/Opposition 5. Interaction, and 6. Representation or Story. There are thousands, perhaps millions of different games, but all contain most, if not all, these powerful factors. Those that don’t contain all the factors are still classified as games by many, but can also belong to other subclasses described below. In addition to these structural factors, there are also important design elements that add to engagement and distinguish a really good game from a poor or mediocre one. Let us discuss these six factors in detail and show how and why they lead to such strong engagement. Rules are what differentiate games from other kinds of play. Probably the most basic definition of a game is that it is organized play, that is to say rule-based. If you don’t have rules you have free play, not a game. Why are rules so important to games? Rules impose limits – they force us to take specific paths to reach goals and ensure that all players take the same paths. They put us inside the game world, by letting us know what is in and out of bounds. What spoils a game is not so much the cheater, who accepts the rules but doesn’t play by them (we can deal with him or her) but the nihilist, who denies them altogether. Rules make things both fair and exciting. When the Australians “bent” the rules of the America’s Cup and built a huge boat in 1988, and the Americans found a way to compete with a catamaran, it was still a race — but no longer the same game.

#### This is why improv comedians and musicians start with specific topics

**Heath 7** – Dan Heath, Senior Fellow at Duke University's CASE center, which supports social entrepreneurs, December 1, 2007, “Get Back in the Box,” online: http://www.fastcompany.com/magazine/121/get-back-in-the-box.html

As we've seen, a well-constructed box can help people generate new ideas. Imagine if, as in the case of the Hotel Vitale team, you could flip through hundreds of pages of Real Simplemagazine for strategic inspiration. Research tells us that brainstorming becomes more productive when it's focused. As jazz great Charles Mingus famously said, "You can't improvise on nothing, man; you've gotta improvise on something."

Keith Sawyer, author of the insightful book Group Genius, spent years studying the work of jazz groups and improvisational theater ensembles. He found that structure doesn't hamper creativity; it enables it. When improv comedians take the stage, they need a concrete stimulus: "What if Romeo had been gay?" The stimulus can't be: "Go on, make me laugh, funnyman."

"Improv actors are taught to be specific," Sawyer says. "Rather than say, 'Look out, it's a gun!' you should say, 'Look out, it's the new ZX-23 laser kill device!' Instead of asking, 'What's your problem?' say, 'Don't tell me you're still pissed off about that time I dropped your necklace in the toilet.'" The paradox is that while specificity narrows the number of paths that the improv could take, it makes it easier for the other actors to come up with the next riff.

#### Outweigh cost of discarding affs that “think outside the box”

**Intrator, 10** [David President of The Creative Organization, October 21, “Thinking Inside the Box,” http://www.trainingmag.com/article/thinking-inside-box

One of the most pernicious myths about creativity, one that seriously inhibits creative thinking and innovation, is the belief that one needs to “think outside the box.” As someone who has worked for decades as a professional creative, nothing could be further from the truth. This a is view shared by the vast majority of creatives, expressed famously by the modernist designer Charles Eames when he wrote, “Design depends largely upon constraints.” The myth of thinking outside the box stems from a fundamental misconception of what creativity is, and what it’s not. In the popular imagination, creativity is something weird and wacky. The creative process is magical, or divinely inspired. But, in fact, creativity is not about divine inspiration or magic. It’s about problem-solving, and by definition a problem is a constraint, a limit, a box. One of the best illustrations of this is the work of photographers. They create by excluding the great mass what’s before them, choosing a small frame in which to work. Within that tiny frame, literally a box, they uncover relationships and establish priorities. What makes creative problem-solving uniquely challenging is that you, as the creator, are the one defining the problem. You’re the one choosing the frame. And you alone determine what’s an effective solution. This can be quite demanding, both intellectually and emotionally. Intellectually, you are required to establish limits, set priorities, and cull patterns and relationships from a great deal of material, much of it fragmentary. More often than not, this is the material you generated during brainstorming sessions. At the end of these sessions, you’re usually left with a big mess of ideas, half-ideas, vague notions, and the like. Now, chances are you’ve had a great time making your mess. You might have gone off-site, enjoyed a “brainstorming camp,” played a number of warm-up games. You feel artistic and empowered. But to be truly creative, you have to clean up your mess, organizing those fragments into something real, something useful, something that actually works. That’s the hard part. It takes a lot of energy, time, and willpower to make sense of the mess you’ve just generated. It also can be emotionally difficult. You’ll need to throw out many ideas you originally thought were great, ideas you’ve become attached to, because they simply don’t fit into the rules you’re creating as you build your box.

#### Rejecting the topic because rules are oppressive doesn’t solve and only a standard like the resolution is limited enough to enable preparation and testing but has enough internal complexity to solve their impact

**Armstrong 2K** – Paul B. Armstrong, Professor of English and Dean of the College of Arts and Sciences at the State University of New York at Stony Brook, Winter 2000, “The Politics of Play: The Social Implications of Iser's Aesthetic Theory,” New Literary History, Vol. 31, No. 1, p. 211-223

\*aleatory = depending on luck, i.e. the throw of a die

Such a play-space also opposes the notion that the only alternative to the coerciveness of consensus must be to advocate the sublime powers of rule-breaking.8 Iser shares Lyotard’s concern that to privilege harmony and agreement in a world of heterogeneous language games is to limit their play and to inhibit semantic innovation and the creation of new games. Lyotard’s endorsement of the “sublime”—the pursuit of the “unpresentable” by rebelling against restrictions, defying norms, and smashing the limits of existing paradigms—is undermined by contradictions, however, which Iser’s explication of play recognizes and addresses. The paradox of the unpresentable, as Lyotard acknowledges, is that it can only be manifested through a game of representation. The sublime is, consequently, in Iser’s sense, an instance of doubling. If violating norms creates new games, this crossing of boundaries **depends on** and carries in its wake the conventions and structures it oversteps. The sublime may be uncompromising, asocial, and unwilling to be bound by limits, but its pursuit of what is not contained in any order or system makes it dependent on the forms it opposes. ¶ The radical presumption of the sublime is not only terroristic in refusing to recognize the claims of other games whose rules it declines to limit itself by. It is also naive and self-destructive in its impossible imagining that it can do without the others it opposes. As a structure of doubling, the sublime pursuit of the unpresentable requires a play-space that includes other, less radical games with which it can interact. Such conditions of exchange would be provided by the nonconsensual reciprocity of Iserian play. ¶ Iser’s notion of play offers a way of conceptualizing power which acknowledges the necessity and force of disciplinary constraints without seeing them as unequivocally coercive and determining. The contradictory combination of restriction and openness in how play deploys power is evident in Iser’s analysis of “regulatory” and “aleatory” rules. Even the regulatory rules, which set down the conditions participants submit to in order to play a game, “permit a certain range of combinations while also establishing a code of possible play. . . . Since these rules limit the text game without producing it, they are regulatory but not prescriptive. They do no more than set the aleatory in motion, and the aleatory rule differs from the regulatory in that it has no code of its own” (FI 273). Submitting to the discipline of regulatory restrictions is both constraining and enabling because it makes possible certain kinds of interaction that the rules cannot completely predict or prescribe in advance. Hence the existence of aleatory rules that are not codified as part of the game itself but are the variable customs, procedures, and practices for playing it. Expert facility with aleatory rules marks the difference, for example, between someone who just knows the rules of a game and another who really knows how to play it. Aleatory rules are more flexible and openended and more susceptible to variation than regulatory rules, but they too are characterized by a contradictory combination of constraint and possibility, limitation and unpredictability, discipline and spontaneity.

## 1nr

### 1NR OV

#### Leaves us in a state of passive paranoia

Baudrillard, ‘08 (Jean Baudrillard, *Present Considerations: The uncertainty of all value* *systems*, journal of Baudrillard studies <http://www.ubishops.ca/baudrillardstudies/vol5_1/v5-1-article2-petit.html>)

Baudrillard: I think that ruse, irony, illusion, denial, reversibility, duplicity and radicality aren't simply passions or attributes of the subject or of consciousness. I think these qualities have passed into things; they are to some extent object passions, arid the world plays with us as much as we play with it. It even has the advantage of playing a double game no doubt, since the objective irony of a world without desire is far superior to our desire and our subjective irony. This is not about alienation or some metaphysical fatality, but a game and a duel. The point is not to set a recriminative thinking (which alienation based thinking always is) against the world's 'criminal' indifference towards us. There are two ways of viewing our condition or our destiny. We can either experience the world, including our modern world of technologies and images (for everything I'm saying about the world here relates not to the world as a mental and philosophical abstraction, but to our cur­rent world of events), in terms of alienation, of expropriation, of loss of determination and as a negative fatality, including the fatality of history as a failed adventure – that is the conventional critical analysis. Or we can take the view that there is a double game going on: on the one hand, we play at mastering the world through our technologies (and over a much longer period through lan­guage, the intellect and many other things), but on the other hand we might, without knowing it, be partners in another game (though I don't know what the stakes in that game might be). At any rate, we would not be in control of it . There is something like a secret reversion, a showing-through of the illusion of the world in the very techniques we use to transform it, which take on an ironic connota­tion as a result. The irony of technology: its alleged reality, its palpably high-level performance, much too dazzling to be true, might be said to be the veil of a duplicity that eludes us, a duplicity we might ourselves involuntarily be acting out. Our very language, our essential and most primitive technology, is the place where the definitive ambivalence of the world rebounds on us. So, in all technologies and images, and also in appearances, we don't know whether the object or the world isn't just toying with us. Just as, with thought, **we don't know if we're thinking the world or if the world is thinking us**. That is the secret of the illusion. Petit: Couldn't it be said that you're a weaver of illusions? Baudrillard: Yes, if illusion is understood, not as simulacrum or unreality, but as something which drives a breach into a world that is too known, too deja-vu, too conventional, too real. The singular, original illusion, the illusion born of the slip, the breakdown, the disruption, the tiniest gap in things. The illusion that colludes with the void, and with the dizzying effect of teetering on the brink remaining sensitive to ini­tial conditions, to effects of turbulence; but also keeping a sensitivity to final conditions, a hypersensitivity to final conditions – that is to say, to predestination and the “fatal”, the only way of preserving a passion for the event – **for the object and for the event as destiny**, not as objective fact. Petit: Doesn't this recovering or teasing-out of appearances and forms go together in you with a desire to disappear?

### AT: Perm

**Even though the system is one of pure simulation, we still need to engage and act within it to avoid the paralytic fascination it forces on our lives.**

**Baudrillard in 81** [Jean, “Simulacra and Simulation” p. 152-154]

Attacking representation no longer has much meaning either. One senses quite clearly; for the same reason, that all student conflicts (as is the case, more broadly; on the level of global society) around the representation, the delegation of power are no longer anything but phantom vicissitudes that yet still manage, out of despair, to occupy the forefront of the stage. Through I don't know what Mobius effect, representation itself has also turned in on itself, and the whole logical universe of the political is dissolved at the same time, ceding its place to a transfinite universe of simulation, where from the beginning no one is represented nor representative of anything any more, where all that is accumulated is deaccumulated at the same time, where even the axiological, directive, and salvageable phantasm of power has disappeared. A universe that is still incomprehensible, unrecognizable, to us, a universe with a malefic curve that our mental coordinates, which are orthogonal and prepared for the infinite linearity of criticism and history, violently resist. Yet it is there that one must fight, if even fighting has any meaning anymore. We are simulators, we are simulacra (not in the classical sense of "appearance"), we are concave mirrors radiated by the social, a radiation without a light source, power without origin, without distance, and it is in this tactical universe of the simulacrum that one will need to fight-without hope, hope is a weak value, but in defiance and fascination. Because one must not refuse the in tense fascination that emanates from this liquefaction of all power, of all axes of value, of all axiology; politics included. This spectacle, which is at once that of the death throes and the apogee of capital, surpasses by far that of the commodity described by the situationists. This spectacle is our essential force. We are no longer in a relation toward capital of uncertain or victorious forces, but in a political one, that is the phantasm of revolution. We are in a relation of defiance, of seduction, and of death toward this universe that is no longer one, precisely because all axiality that escapes it. The challenge capital directs at us in its delirium-liquidating without shame the law of profit, surplus value, productive finalities, structures of power, and finding at the end of its process the profound immorality (but also the seduction) of primitive rituals of destruction, this very challenge must be raised to an insanely higher level. Capital, like value, is irresponsible, irreversible, ineluctable. Only to value is capital capable of offering a fantastic spectacle of its decomposition only the phantom of value still floats over the desert of the classical structures of capital, just as the phantom of religion floats over a world now long desacralized, just as the phantom of knowledge floats over the university. It is up to us to again become the nomads of this desen, but disengaged from the mechanical illusion of value. We will live in this world, which for us has all the disquieting strangeness of the desert and of the simulacrum, with all the veracity of living phantoms, of wandering and simulating animals that capital, that the death of capital has made of us-because the desert of cities is equal to the desert of sand-the jungle of signs is equal to that of the forests-the vertigo of simulacra is equal to that of nature-only the vertiginous seduction of a dying system remains, in which work buries work, in which value buries value-leaving a virgin, sacred space without pathways, continuous as Bataille wished it, where only the wind lifts the sand, where only the wind watches over the sand. What can one make of all this in the political order? Very little. But we also have to fight against the profound fascination exerted on us by the death throes of capital, against the staging by capital of its own death, when we are really the ones in our final hours. To leave it the initiative of its own death, is to leave it all the privileges of revolution. Surrounded by the simulacrum of value and by the phantom of capital and of power, we are much more disarmed and impotent than when surrounded by the law of value and of the commodity, since the system has revealed itself capable of integrating its own death and since we are relieved of the responsibility for this death, and thus of the stake of our own life. This supreme ruse of the system, that of the simulacrum of its death, through which it maintains us in life by having liquidated through absorption all possible negativity, only a superior ruse can stop. Challenge or imaginary science, only a pataphysics of simulacra can remove us from the system’s strategy of simulation and the impasse of death in which it imprisons us.

# Round 8 – Aff v Wake BM

## 1ac

### Plan

#### The United States federal government should substantially increase loan guarantees for energy produced by integral fast reactors using the S-PRISM design in the United States.

### 1

#### Adv 1: Nuclear leadership

#### Nuclear power is inevitable – Inaction on IFRs is killing US nuclear leadership

**Shuster 11** [Joseph Shuster, founder of Minnesota Valley Engineering and Chemical Engineer, 9-8-2011, "Response to Draft Report From Obama’s Blue Ribbon Commission (BRC) on America’s Nuclear Future dated July 29, 2011," Beyond Fossil Fools]

Contrary to the commission’s declarations on the matter, the U.S. is in danger of losing its once ¶ strong nuclear leadership. As a result we would have less to say about how nuclear materials are ¶ to be managed in the world and that could expose the U.S. to some inconvenient if not downright ¶ dangerous consequences. China is now building a large pilot plant said to be identical to our ¶ successful EBR-II plant that proved the design of the IFR. Meanwhile in the U.S. after complete ¶ success, EBR II was shut down, not for technical reasons but for political reasons during the ¶ Clinton administration, a decision destined to be one of the worst in our nation’s history.¶ Much of the world is already committed to a nuclear future with some countries eagerly waiting ¶ to license the American version of Generation IV Fast Reactors—the IFR. We still have the best ¶ IFR technology in the world but have squandered much of our lead, partly by allowing a largely ¶ unqualified commission two years of useless deliberation. What we really did was give our ¶ competitors an additional two years to catch up.

#### IFR restores leadership on nuclear issues – key to contain proliferation

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "IFR FaD context – the need for U.S. implementation of the IFR," 2/18/10) http://bravenewclimate.com/2010/02/18/ifr-fad-context/-http://bravenewclimate.com/2010/02/18/ifr-fad-context/

ON THE NEED FOR U.S. IMPLEMENTATION OF THE INTEGRAL FAST REACTOR¶ The IFR ties into a very big picture — international stability, prevention of war, and avoiding “proliferation” (spread) of nuclear weapons.¶ – The need for energy is the basis of many wars, including the ones we are engaged in right now (Iraq and Afghanistan). If every nation had enough energy to give its people a decent standard of living, that reason for conflict would disappear.¶ – The only sustainable energy source that can provide the bulk of the energy needed is nuclear power.¶ – The current need is for more thermal reactors — the kind we now use.¶ – But for the longer term, to provide the growing amount of energy that will be needed to maintain civilization, the only proven way available today is with fast-reactor technology.¶ – The most promising fast-reactor type is the IFR – metal-fueled, sodium-cooled, with pyroprocessing to recycle its fuel.¶ – Nobody knows yet how much IFR plants would cost to build and operate. Without the commercial-scale demo of the IFR, along with rationalization of the licensing process, any claims about costs are simply hand-waving guesses.¶ \* \* \* \*¶ Background info on proliferation (of nuclear weapons). Please follow the reasoning carefully.¶ – Atomic bombs can be made with highly enriched uranium (90% U-235) or with good-quality plutonium (bomb designers want plutonium that is ~93% Pu-239).¶ – For fuel for an LWR, the uranium only has to be enriched to 3 or 4% U-235.¶ – To make a uranium bomb you don’t need a reactor — but you do need access to an enrichment facility or some other source of highly enriched uranium…¶ – Any kind of nuclear reactor can be used to make weapons-quality plutonium from uranium-238, but the uranium has to have been irradiated for only a very short period. In other words, nobody would try to make a plutonium weapon from ordinary spent fuel, because there are easier ways to get plutonium of much better quality.¶ – Plutonium for a weapon not only has to have good isotopic quality, it also has to be chemically uncontaminated. Thus the lightly irradiated fuel has to be processed to extract the plutonium in a chemically pure form. But mere possession of a reactor is not sufficient for a weapons capability — a facility using a chemical process called PUREX is also needed.¶ – Regardless of how many reactors a country has, it cannot have a weapons capability unless it has either the ability to enrich uranium or to do PUREX-type fuel reprocessing.¶ – Therefore, the spread of weapons capability will be strongly inhibited if the only enrichment and reprocessing facilities are in countries that already have a nuclear arsenal.¶ – But that can only happen if countries with reactors (and soon that will be most of the nations of the world) have absolutely ironclad guarantees that they can get the fuel they need even if they can’t make their own, regardless of how obnoxious their political actions might be.¶ – Such guarantees will have to be backed up by some sort of international arrangement, and that can only come to pass if there is effective leadership for the laborious international negotiations that will have to take place. (For a relevant discussion, see here)¶ – At present, the only nation that has a realistic potential to be such a leader is the United States.¶ – But a country cannot be such a leader in the political arena unless it is also in the technological forefront.¶ – The United States used to be the reactor-technology leader, but it abandoned that role in 1994 when it terminated the development of the IFR.¶ – Since then, other nations — China, India, Japan, South Korea, Russia, France — have proceeded to work on their own fast-reactor versions, which necessarily will involve instituting a fuel-processing capability.¶ – Thus the United States is being left behind, and is rapidly losing its ability to help assure that the global evolution of the technology of nuclear energy proceeds in a safe and orderly manner.¶ – But maybe it’s not too late yet. After all, the IFR is the fast-reactor technology with the post promise (for a variety of reasons), and is ready for a commercial-scale demonstration to settle some uncertainties about how to scale up the pyroprocess as needed, to establish better limits on the expected cost of production units, and to develop an appropriate, expeditious licensing process.¶ – Such a demo will require federal seed money. It’s time to get moving.

#### Several impacts – 1st prolif

#### Transition to IFRs create a global proliferation resistant fuel cycle

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "Q%26A on Integral Fast Reactors – safe, abundant, non-polluting power," 9/18/10) <http://bravenewclimate.com/2010/09/18/ifr-fad-7/-http://bravenewclimate.com/2010/09/18/ifr-fad-7/>

Thermal reactors with reprocessing would do at least a little better.¶ Recycling (it would be with the PUREX process, or an equivalent) could stretch the U-235 supply another few decades—but remember the consequences: growing stockpiles of plutonium, pure plutonium streams in the PUREX plants, and the creation of 100,000-year plutonium mines.¶ If you’re going to talk about “PUREX” and “plutonium mines” you should say what they are. First, what’s PUREX?¶ It’s a chemical process developed for the nuclear weapons program, to separate plutonium from everything else that comes out of a reactor. Weapons require very pure plutonium, and that’s what PUREX delivers. The pyroprocess used in the IFR is very different. It not only does not, it cannot, produce plutonium with the chemical purity needed for weapons.¶ Why do you keep referring to “chemical” purity?¶ Because chemical and isotopic quality are two different things. Plutonium for a weapon has to be pure chemically. Weapons designers also want good isotopic quality—that is, they want at least 93% of their plutonium to consist of the isotope Pu- 239. A chemical process does not separate isotopes.¶ I see. Now, what about the “plutonium mines?”¶ When spent fuel or vitrified reprocessing waste from thermal reactors is buried, the result is a concentrated geological deposit of plutonium. As its radioactivity decays, those deposits are sources of raw material for weapons, becoming increasingly attractive over the next 100,000 years and more (the half-life of Pu-239 being 24,000 years).¶ You listed, back at the beginning, some problems that the IFR would ameliorate. A lot of those problems are obviously related to proliferation of nuclear weapons.¶ Definitely. For instance, although thermal reactors consume more fuel than they produce, and thus are not called “breeders,” they inescapably are prolific breeders of plutonium, as I said. And that poses serious concerns about nuclear proliferation. And proliferation concerns are even greater when fuel from thermal reactors is recycled, since the PUREX method is used. IFRs have neither of those drawbacks.¶ Why does it seem that there is more proliferation-related concern about plutonium than about uranium? Can’t you make bombs from either?¶ Yes. The best isotopes for nuclear explosives are U-235, Pu- 239, and U-233. Only the first two of those, however, have been widely used. All the other actinide isotopes, if present in appreciable quantity, in one way or another complicate the design and construction of bombs and degrade their performance. Adequate isotopic purity is therefore important, and isotopic separation is much more difficult than chemical separation. Even so, with plutonium of almost any isotopic composition it is technically possible to make an explosive (although designers of military weapons demand plutonium that is at least 93% Pu-239), whereas if U-235 is sufficiently diluted with U-238 (which is easy to do and hard to undo), the mixture cannot be used for a bomb.¶ High-quality plutonium is the material of choice for a large and sophisticated nuclear arsenal, while highly enriched uranium would be one of the easier routes to a few crude nuclear explosives.¶ So why the emphasis on plutonium?¶ You’re asking me to read people’s minds, and I’m not good at that. Both uranium and plutonium are of proliferation concern.¶ Where is the best place for plutonium?¶ Where better than in a reactor plant—particularly an IFR facility, where there is never pure plutonium (except some, briefly, when it comes in from dismantled weapons), where the radioactivity levels are lethal, and where the operations are done remotely under an inert, smothering atmosphere? Once enough IFRs are deployed, there never will need to be plutonium outside a reactor plant—except for the then diminishing supply of plutonium left over from decades of thermal-reactor operation.¶ How does the IFR square with U.S. policy of discouraging plutonium production, reprocessing and use?¶ It is entirely consistent with the intent of that policy—to render plutonium as inaccessible for weapons use as possible. The wording of the policy, however, is now obsolete.¶ How so?¶ It was formulated before the IFR’s pyroprocessing and electrorefining technology was known—when “reprocessing” was synonymous with PUREX, which creates plutonium of the chemical purity needed for weapons. Since now there is a fuel cycle that promises to provide far-superior management of plutonium, the policy has been overtaken by events.¶ Why is the IFR better than PUREX? Doesn’t “recycling” mean separation of plutonium, regardless of the method?¶ No, not in the IFR—and that misunderstanding accounts for some of the opposition. The IFR’s pyroprocessing and electrorefining method is not capable of making plutonium that is pure enough for weapons. If a proliferator were to start with IFR material, he or she would have to employ an extra chemical separation step.¶ But there is plutonium in IFRs, along with other fissionable isotopes. Seems to me that a proliferator could take some of that and make a bomb.¶ Some people do say that, but they’re wrong, according to expert bomb designers at Livermore National Laboratory. They looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible—far, far harder than using today’s reactor-grade plutonium.¶ So? Why wouldn’t they use chemical separation?¶ First of all, they would need a PUREX-type plant—something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium—of any isotopic quality—this is probably the all-time, hands-down hardest.¶ The Long Term¶ Does the plutonium now existing and being produced by thermal reactors raise any proliferation concerns for the long term?¶ It certainly does. As I said earlier, burying the spent fuel from today’s thermal reactors creates geological deposits of plutonium whose desirability for weapons use is continually improving. Some 30 countries now have thermal-reactor programs, and the number will grow. To conceive of that many custodial programs being maintained effectively for that long is a challenge to the imagination. Since the IFR can consume plutonium, it can completely eliminate this long-term concern.¶ Are there other waste-disposal problems that could be lessened?¶ Yes. Some constituents of the waste from thermal reactors remain appreciably radioactive for thousands of years, leading to 10,000-year stability criteria for disposal sites. Waste disposal would be simpler if that time frame could be shortened. With IFR waste, the time of concern is less than 500 years.¶ What about a 1994 report by the National Academy of Sciences? The Washington Post said that the NAS report “denounces the idea of building new reactors to consume plutonium.”¶ That characterization of the report is a little strong, but it is true that the members of the NAS committee seem not to have been familiar with the plutonium-management potential of the IFR. They did, however, recognize the “plutonium mine” problem. They say (Executive Summary, p.3):¶ Because plutonium in spent fuel or glass logs incorporating high-level wastes still entails a risk of weapons use, and because the barrier to such use diminishes with time as the radioactivity decays, consideration of further steps to reduce the long-term proliferation risks of such materials is required, regardless of what option is chosen for [near-term] disposition of weapons plutonium. This global effort should include continued consideration of more proliferation-resistant nuclear fuel cycles, including concepts that might offer a long-term option for nearly complete elimination of the world’s plutonium stocks. The IFR, obviously, is just such a fuel cycle—a prime candidate for “continued consideration.”

#### We’re on the brink of rapid prolif – access to tech is inevitable and multilateral institutions fail

**CFR 12** [CFR 7-5-2012, "The Global Nuclear Nonproliferation Regime," Council on Foreign Relations]

Nuclear weapons proliferation, whether by state or nonstate actors, poses one of the greatest threats to international security today. Iran's apparent efforts to acquire nuclear weapons, what amounts to North Korean nuclear blackmail, and the revelation of the A.Q. Khan black market nuclear network all underscore the far-from-remote possibility that a terrorist group or a so-called rogue state will acquire weapons of mass destruction or materials for a dirty bomb.¶ The problem of nuclear proliferation is global, and any effective response must also be multilateral. Nine states (China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States) are known or believed to have nuclear weapons, and more than thirty others (including Japan, Germany, and South Korea) have the technological ability to quickly acquire them. Amid volatile energy costs, the accompanying push to expand nuclear energy, growing concerns about the environmental impact of fossil fuels, and the continued diffusion of scientific and technical knowledge, access to dual-use technologies seems destined to grow.¶ In the background, a nascent global consensus regarding the need for substantial nuclear arms reductions, if not complete nuclear disarmament, has increasingly taken shape. In April 2009, for instance, U.S. president Barack Obama reignited global nonproliferation efforts through a landmark speech in Prague. Subsequently, in September of the same year, the UN Security Council (UNSC) unanimously passed Resolution 1887, which called for accelerated efforts toward total nuclear disarmament. In February 2012, the number of states who have ratified the Comprehensive Test Ban Treaty increased to 157, heightening appeals to countries such as the United States, Israel, and Iran to follow suit.¶ Overall, the existing global nonproliferation regime is a highly developed example of international law. Yet, despite some notable successes, existing multilateral institutions have failed to prevent states such as India, Pakistan, and North Korea from "going nuclear," and seem equally ill-equipped to check Iran as well as potential threats from nonstate, terrorist groups. The current framework must be updated and reinforced if it is to effectively address today's proliferation threats, let alone pave the way for "the peace and security of a world without nuclear weapons."

#### New proliferators will be uniquely destabilizing -- guarantees conflict escalation.

Cimbala, ‘8

[Stephen, Distinguished Prof. Pol. Sci. – Penn. State Brandywine, Comparative Strategy, “Anticipatory Attacks: Nuclear Crisis Stability in Future Asia”, 27, InformaWorld]

If the possibility existed of a mistaken preemption during and immediately after the Cold War, between the experienced nuclear forces and command systems of America and Russia, then it may be a matter of even more concern with regard to states with newer and more opaque forces and command systems. In addition, the Americans and Soviets (and then Russians) had a great deal of experience getting to know one another’s military operational proclivities and doctrinal idiosyncrasies, including those that might influence the decision for or against war. Another consideration, relative to nuclear stability in the present century, is that the Americans and their NATO allies shared with the Soviets and Russians a commonality of culture and historical experience. Future threats to American or Russian security from weapons of mass destruction may be presented by states or nonstate actors motivated by cultural and social predispositions not easily understood by those in the West nor subject to favorable manipulation during a crisis. The spread of nuclear weapons in Asia presents a complicated mosaic of possibilities in this regard. States with nuclear forces of variable force structure, operational experience, and command-control systems will be thrown into a matrix of complex political, social, and cultural crosscurrents contributory to the possibility of war. In addition to the existing nuclear powers in Asia, others may seek nuclear weapons if they feel threatened by regional rivals or hostile alliances. Containment of nuclear proliferation in Asia is a desirable political objective for all of the obvious reasons. Nevertheless, the present century is unlikely to see the nuclear hesitancy or risk aversion that marked the Cold War, in part, because the military and political discipline imposed by the Cold War superpowers no longer exists, but also because states in Asia have new aspirations for regional or global respect.12 The spread of ballistic missiles and other nuclear-capable delivery systems in Asia, or in the Middle East with reach into Asia, is especially dangerous because plausible adversaries live close together and are already engaged in ongoing disputes about territory or other issues.13 The Cold War Americans and Soviets required missiles and airborne delivery systems of intercontinental range to strike at one another’s vitals. But short-range ballistic missiles or fighter-bombers suffice for India and Pakistan to launch attacks at one another with potentially “strategic” effects. China shares borders with Russia, North Korea, India, and Pakistan; Russia, with China and NorthKorea; India, with Pakistan and China; Pakistan, with India and China; and so on. The short flight times of ballistic missiles between the cities or military forces of contiguous states means that very little time will be available for warning and attack assessment by the defender. Conventionally armed missiles could easily be mistaken for a tactical nuclear first use. Fighter-bombers appearing over the horizon could just as easily be carrying nuclear weapons as conventional ordnance. In addition to the challenges posed by shorter flight times and uncertain weapons loads, potential victims of nuclear attack in Asia may also have first strike–vulnerable forces and command-control systems that increase decision pressures for rapid, and possibly mistaken, retaliation. This potpourri of possibilities challenges conventional wisdom about nuclear deterrence and proliferation on the part of policymakers and academic theorists. For policymakers in the United States and NATO, spreading nuclear and other weapons of mass destruction in Asia could profoundly shift the geopolitics of mass destruction from a European center of gravity (in the twentieth century) to an Asian and/or Middle Eastern center of gravity (in the present century).14 This would profoundly shake up prognostications to the effect that wars of mass destruction are now passe, on account of the emergence of the “Revolution in Military Affairs” and its encouragement of information-based warfare.15 Together with this, there has emerged the argument that large-scale war between states or coalitions of states, as opposed to varieties of unconventional warfare and failed states, are exceptional and potentially obsolete.16 The spread of WMD and ballistic missiles in Asia could overturn these expectations for the obsolescence or marginalization of major interstate warfare.

#### Extinction.

Krieger, ‘9

[David, Pres. Nuclear Age Peace Foundation and Councilor – World Future Council, “Still Loving the Bomb After All These Years”, 9-4, https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger]

Jonathan Tepperman’s article in the September 7, 2009 issue of Newsweek, “Why Obama Should Learn to Love the Bomb,” provides a novel but frivolous argument that nuclear weapons “may not, in fact, make the world more dangerous….” Rather, in Tepperman’s world, “The bomb may actually make us safer.” Tepperman shares this world with Kenneth Waltz, a University of California professor emeritus of political science, who Tepperman describes as “the leading ‘nuclear optimist.’” Waltz expresses his optimism in this way: “We’ve now had 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Actually, there were a number of proxy wars between nuclear weapons states, such as those in Korea, Vietnam and Afghanistan, and some near disasters, the most notable being the 1962 Cuban Missile Crisis. Waltz’s logic is akin to observing a man falling from a high rise building, and noting that he had already fallen for 64 floors without anything bad happening to him, and concluding that so far it looked so good that others should try it. Dangerous logic! Tepperman builds upon Waltz’s logic, and concludes “that all states are rational,” even though their leaders may have a lot of bad qualities, including being “stupid, petty, venal, even evil….” He asks us to trust that rationality will always prevail when there is a risk of nuclear retaliation, because these weapons make “the costs of war obvious, inevitable, and unacceptable.” Actually, he is asking us to do more than trust in the rationality of leaders; he is asking us to gamble the future on this proposition. “The iron logic of deterrence and mutually assured destruction is so compelling,” Tepperman argues, “it’s led to what’s known as the nuclear peace….” But if this is a peace worthy of the name, which it isn’t, it certainly is not one on which to risk the future of civilization. One irrational leader with control over a nuclear arsenal could start a nuclear conflagration, resulting in a global Hiroshima. Tepperman celebrates “the iron logic of deterrence,” but deterrence is a theory that is far from rooted in “iron logic.” It is a theory based upon threats that must be effectively communicated and believed. Leaders of Country A with nuclear weapons must communicate to other countries (B, C, etc.) the conditions under which A will retaliate with nuclear weapons. The leaders of the other countries must understand and believe the threat from Country A will, in fact, be carried out. The longer that nuclear weapons are not used, the more other countries may come to believe that they can challenge Country A with impunity from nuclear retaliation. The more that Country A bullies other countries, the greater the incentive for these countries to develop their own nuclear arsenals. Deterrence is unstable and therefore precarious. Most of the countries in the world reject the argument, made most prominently by Kenneth Waltz, that the spread of nuclear weapons makes the world safer. These countries joined together in the Nuclear Non-Proliferation Treaty (NPT) to prevent the spread of nuclear weapons, but they never agreed to maintain indefinitely a system of nuclear apartheid in which some states possess nuclear weapons and others are prohibited from doing so. The principal bargain of the NPT requires the five NPT nuclear weapons states (US, Russia, UK, France and China) to engage in good faith negotiations for nuclear disarmament, and the International Court of Justice interpreted this to mean complete nuclear disarmament in all its aspects. Tepperman seems to be arguing that seeking to prevent the proliferation of nuclear weapons is bad policy, and that nuclear weapons, because of their threat, make efforts at non-proliferation unnecessary and even unwise. If some additional states, including Iran, developed nuclear arsenals, he concludes that wouldn’t be so bad “given the way that bombs tend to mellow behavior.” Those who oppose Tepperman’s favorable disposition toward the bomb, he refers to as “nuclear pessimists.” These would be the people, and I would certainly be one of them, who see nuclear weapons as presenting an urgent danger to our security, our species and our future. Tepperman finds that when viewed from his “nuclear optimist” perspective, “nuclear weapons start to seem a lot less frightening.” “Nuclear peace,” he tells us, “rests on a scary bargain: you accept a small chance that something extremely bad will happen in exchange for a much bigger chance that something very bad – conventional war – won’t happen.” But the “extremely bad” thing he asks us to accept is the end of the human species. Yes, that would be serious. He also doesn’t make the case that in a world without nuclear weapons, the prospects of conventional war would increase dramatically. After all, it is only an unproven supposition that nuclear weapons have prevented wars, or would do so in the future. We have certainly come far too close to the precipice of catastrophic nuclear war. As an ultimate celebration of the faulty logic of deterrence, Tepperman calls for providing any nuclear weapons state with a “survivable second strike option.” Thus, he not only favors nuclear weapons, but finds the security of these weapons to trump human security. Presumably he would have President Obama providing new and secure nuclear weapons to North Korea, Pakistan and any other nuclear weapons states that come along so that they will feel secure enough not to use their weapons in a first-strike attack. Do we really want to bet the human future that Kim Jong-Il and his successors are more rational than Mr. Tepperman?

#### Second – competitiveness

#### US is ceding nuclear competitiveness now – plan key to resolve

**Barton 11** [Charles Barton, Nuclear Green, “Have the Chinese Been Reading Energy from Thorium or Nuclear Green?” 1/31/11]

Last week the Chinese Academy of Science announced that it planned to finance the development of a Chinese Thorium Breeding Molten Salt Reactor (TMSR) or as it is called in the United States, the Liquid Fluoride Thorium Reactor (LFTR). The announcement came in a news report from Weihui.news365.com.cn. The announcement was relayed to Westerners who were interested in Thorium breeding molten salt reactors in a discussion thread comment posted by Chinese Scientist Hua Bai, last Friday. Kirk Sorensen, Brian Wang, and I all posted about Bai's announcement on Sunday, January 30.¶ In addition to these posts, the thread which Hua Bai started contains the revelation that the engineer who heads the Chinese Molten Salt Reactor Project is none other than Jiang Mianheng, a son of Retired Chinese President, Jiang Zemin. In addition to being President of People's China, Jiang was the chairmanship of the powerful Central Military Commission, suggesting the likelihood that Jiang Mianheng has military ties. He is the cofounder of Semiconductor Manufacturing International Corporation, and a former lead researcher in the Chinese Space Program, as well as Vice President of the Chinese Academy of Sciences. The presence of such a well connected Chinese science leader suggests that the Chinese TMSR project is regarded as important by the Chinese leadership. Thus the Chinese leadership, unlike the American Political andscientific leadership has grasped the potential of molten salt nuclear technology.¶ Yesterday, "horos11" commented on my blog, Nuclear Green,¶ I read this, and I didn't know whether to laugh or cry.¶ After all, this site and others have been sounding the clarion call to action on this, and I should be glad that someone finally heeded it and its getting traction in a place that really matters, but I have a sinking feeling that:¶ a. its going to take far less than their planned 20 years¶ b. they are going to succeed beyond their wildest expectations.¶ Which means that the next, giant sucking sound we may hear is the sound of the 5 trillion dollar energy market heading east, further depressing our economy, weakening the dollar (and the euro) and ultimately making the US economy dependent on rescue from the chinese in the future (when they are done rescuing themselves).¶ Yet, in the large scheme of things, this is a definite good, and may be our savior from anthropomorphic climate change.¶ so again, laugh? or cry. I guess its up to how you view things - I guess I'm tentatively laughing at the moment, but mostly from the overwhelming irony of all this.¶ Jason Ribeiro added,¶ I can't help but have a feeling of sour grapes about this. While I congratulate China for doing the obvious, America has its head buried so far in the sand it can't see straight. With all the internet clamor about LFTR that's been going on the internet in the past 3-4 years, it was the non-English speaking Chinese that finally got the message that this was a great idea worth investing in. Our leadership ought to be ashamed of themselves.¶ The Chinese News story on the Thorium Molten Salt Reactor reflects the clear Chinese thinking about the potential role of LFTRs in the future Chinese energy economy. I will paraphrase,¶ "the future of advanced nuclear fission energy - nuclear energy, thorium-based molten salt reactor system" project was officially launched. . . The scientific goal is to developed a new generation of nuclear energy systems [and to achieve commercial] use [in] 20 years or so. We intend to complete the technological research needed for this system and to assert intellectual property rights to this technology. Fossil fuel energy is being depleted, and solar and wind energy are not stable enough, while hydropower development has reached the limit of its potential.. . .¶ Nuclear power seems to offer us a very attractive future energy choice, high energy density, low carbon emissions, and the potential for sustainable development. . . . China has chosen {to make an energy] breakthrough in the direction of molten salt reactors. . . . this liquid fuel reactors has a simple structure and can run at atmospheric pressure, [it can use any fissionable material as fuel} and has other advantages. "This new stove" can be made very small, will operate with stabile nuclear fuel, and will run for several decades before replacement. After the thorium is completely used in the nuclear process the TMSR will produce nuclear waste will be only be one-thousandth of that produced by existing nuclear technologies.¶ As the world is still in the development of a new generation of nuclear reactors, the thorium-based independent research and development of molten salt reactors, will be possible to obtain all intellectual property rights. This will enable China to firmly grasp the lifeline of energy in their own hands.¶ Let the word "nuclear" no longer mean war.¶ In the past, people always talk about "core" colors. The Hiroshima atomic bomb, the Chernobyl nuclear power plant explosion, these are like a lingering nightmare that is marked in human history. But a new generation of nuclear power will take the color green, the mark of peace taking human beings into a new era.¶ Oh Wow! It sounds as if someone in China has been reading Nuclear Green or Energy from Thorium. And there is more!¶ In addition, the "new stove" operating at atmospheric pressure operation, rather than the traditional reactor operating at high pressure, will be simple and safe. "When the furnace temperature exceeds a predetermined value, in the bottom of the MSR core, a frozen plug of salt will automatically melt, releasing the liquid salt in the reactor core into an emergency storage tanks, and terminating the nuclear reaction," scientist Xu Hongjie told reporters, as the cooling agent is fluoride salts (the same salts that also carrying the nuclear fuel), after the liquid salt cools it turns solid, which prevents the nuclear fuel from leaking out of its containment, and thus will not pollute ground water causing an ecological disasters. The added safety opens up new possibilities for reactors, they can be built underground, completely isolating radioactive materials from the reactor, also the underground location will protect the reactor from an enemy's weapon attack. Reactors can be built in large cities, in the wilderness, or in remote villages.¶ Well Kirk Sorensen and I wanted our ideas to become national priorities. We just did not know in what country it would happen first. Unfortunately the leadership of the United States, continues to be determined to lead this nation into the wilderness of powerlessness, while the leadership of communist China is alert to the possibilities of a new energy age. Possibilities that can be realized by molten salt nuclear technology. Lets hope that someone in the White House or Congress wakes up. The Chinese understand the implications of their venture into Molten Salt nuclear technology. The American leadership does not.

#### Ceding nuclear leadership creates an energy disadvantage vis a vi other countries, destroys perception of competitiveness

**Barton 10** (Charles Barton, Nuclear Green "Keeping up with China: The Economic Advantage of Molten Salt Nuclear Technology," 12/1/10)

American and European nuclear development can either proceed by following the cost lowering paths being pioneered in Asia, or begin to develop low cost innovative nuclear plans. Since low labor costs, represent the most significant Chinese and Indian cost advantage, it is unlikely that European and American reactor manufacturers will be able to compete with the Asians on labor costs. Labor costs for conventional reactors can be lowered by factory construction of reactor componant moduels, but the Chinese are clearly ahead of the West in that game. Yet the weakness of the Chinese system is the relatively large amount of field labor that the manufacture of large reactors requires.¶ The Chines system is to introduce labor saving devices where ever and when ever possible, but clearly shifting labor from the field to a factory still offers cost advantages. The more labor which can be performed in the factory, the more labor cost savings are possible. Other savings advantages are possible by simplifying reactor design, and lowering materials input. Building a reactor with less materials and fewer parts lowers nuclear costs directly and indirectly. Decreasing core size per unit of power output also can contribute a cost advantage. Direct saving relate to the cost of parts and matetials, but fewer parts and less material also means less labor is required to put things together, since there is less to put together. In addition a small reactor core structure, would, all other things being equal, require a smaller housing. Larger cores mean more structural housing expenses.¶ While the Pebel Bed Modular Reactor has a relatively simple core design, the actual core is quite large, because of the cooling inefficiency of helium. Thus, the simplisity of the PBMR core is ballanced by its size, its total materials input, and the size of its housing. The large core and housing requirements of the PBMR also adds to its labor costs, especially its field labor cost. Thus while the simplisity of the PBMR core design would seem to suggest a low cost, this expectation is unlikely to br born out in practice.¶ Transportation limits ability to shift production from the field to the factory. An analysis preformed by the University of Tennessee's, and the Massachusettes Institute of Technology's Departments of Nuclear Engineering looked at the 335 MW Westinghouse IRIS reactor. The analysis found,¶ A rough estimate of the weight for a 1000 MWt modular reactor and its secondary system, similar to the Westinghouse IRIS plant, is taken as the summation of all of the major components in the analysis. Many of the smaller subcomponents have been neglected. The containment structure contributes ~2.81E6 kg (3100 tons). The primary reactor vessel and the turbo-generator contribute ~1.45E6 kg (1600 tons) each. The heat exchange equipment and piping contribute ~6.78E5 kg (747 tons). Therefore, the total weight of the major plant components is~ 6.39E6 kg (7047 tons).¶ The weight and width of the IRIS would place constraints of barge transportation of the IRIS on the Tennessee and Ohio Rivers. The report stated,¶ The Westinghouse barge mounted IRIS reactor modules were limited in size based on input from the University of Tennessee. The barge dimension limitations were established to be 30 meters (98’-5”) wide, 100 meters (328’-1”) long, with a 2.74 meter (9’) draft. These dimensions establish the barge maximum displacement at 8,220 metric tons. In addition, the barge(s) are limited to ~20 meters (65’-7”) in height above the water surface, so that they fit under crossing bridges and can be floated up the Mississippi, Ohio, and Tennessee Rivers as far as the city of Chattanooga, Tennessee. Further movement above Chattanooga is currently limited by the locks at the Chickamauga Reservoir dam.¶ The above barge displacement limitation will impose severe limits on how much structural support and shield concrete can be placed in the barge modules at the shipyard. For example, the estimated weight of concrete in the IRIS containment and the surrounding cylindrical shield structure alone greatly exceeds the total allowable barge displacement. This however does not mean that barge- mounted pressurized water reactors (PWRs) are not feasible. It does mean that barge-mounted PWRs need to employ steel structures that are then used as the forms for the addition of needed concrete after the barge has been floated into its final location and founded.¶ Thus for the IRIS, barge transportation presented problems, and rail transportation was unthinkable. The core of the 125 MW B&W mPower reactor is rail transportable, but final onsite mPower assembly/construction became a significant undertaking, with a consequent increase in overall cost. The core unit does include a pressure vessel and heat exchange mounted above the actual reactor, but many other mPower component modules must be transported seperately and assembled on site.¶ The IIRIS project demonstrates the unlikelihood of whole small reactors being transported to the field ready for energy production without some field construction. This might be possible, however, for mini reactors that are two small to be viewed as a plausible substitute for the fossil fuel powered electrical plants currently supplying electricity for the grid. This then leaves us with¶ with a gap between the cost savings potential of factory manufacture, and the costly process of onsite assembly. B&W the manufacturers of the small 125 MW MPower reactor still has not clarified what percentage of the manufacturing process would be factory based. It is clear, however that B&W knows where it is comming from and what its problems are, as Rod Adams tells us:¶ I spoke in more detail to Chris Mowry and listened as he explained how his company's research on the history of the nuclear enterprise in the US had revealed that 30% of the material and labor cost of the existing units came from the supplied components while 70% was related to the site construction effort. He described how the preponderance of site work had influenced the cost uncertainty that has helped to discourage new nuclear plant construction for so many years.¶ What Mowey did not tell Adams is what percentage of the materials and labor costs will be shifted to the factory as mPower reactors are produced. There have been hints that a significant percentage of the mPower manufacturing process, perhaps as much as 50% will still take place on site. B&W still is working on the design of their manufacturing process, and thus do not yet know all of the details. Clearly then more work needs to be done on controlling onsite costs.¶ Finally, a shift to advanced technology will can lower manufacturing costs. Compared to Light Water reactors, Liquid metal cooled reactors use less material and perhaps less labor, but pool type liqiod metal reactors are not compact. Compared to Liquid Metal cooled reactors, Molten Salt cooled reactor will have more compact cores. Shifting to closed cycle gas turbines will decrease construction costs. The added safety of Molten Salt cooled reactors will increase reactor simplification, and thus further lower labor and materials related construction costs.¶ The recycling of old power plant locations will also offer some savings. Decreasing manufacturing time will lower interest costs. ¶ All in all there are a lot of reasons to expect lower nuclear manufacturing costs with Generation IV nuclear power plants, and at present no one has come up with a good reason for expecting Molten Salt cooled reactors to cost more than traditional NPPs. The argument, however, is not iron clad. Even if no one has pointed out plasuible errors in it, we need to introduce the caviot that expectations frenquently are not meet. It is possible, for example that the NRC might impose unreasonable expectations on molten salt cooled reactors. Demanding, for example, that they include the same safety features as LWRs, even though they do not have many LWR safety problems. But the potential savings on the cost of energy by adopting molten salt nuclear technology is substantial, and should not be ignored. ¶ To return to the problem posed by Brian Wang, the problem of lower Asian nuclear construction costs. If Europe and the United States cannot meet the Asican energy cost challenge, their economies will encounter a significant decline. Because of Labor cost advantages, it is unlikely that Generation III nuclear plants will ever cost less to build in the United States or Europe than in Asia. in order to keep the American and European economies competitive, the United States and Europe must adopt a low cost, factory manufactured nuclear technology. Molten Salt nuclear technology represents the lowest cost approach, and is highly consistent with factory manufacture and other cost lowering approaches. Couple to that the outstanding safety of molten salt nuclear technology, the potential for dramatically lowering the creation of nuclear waste, and the obsticles to nuclear proliferation posed by molten salt nuclear rechnology, and we see a real potential for keeping the American and European economies competitive, at least as far as energy costs are concerned.

#### That prevents great power wars – perception is key

**Baru 9** - Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore (Sanjaya, “Year of the power shift?,”

http://www.india-seminar.com/2009/593/593\_sanjaya\_baru.htm

**T**here is no doubt that economics alone will not determine the balance of global power, but there is no doubt either that economics has come to matter for more.¶ The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s *Arthashastra* says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5¶ In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others.¶ ‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s *military-power* balance have followed alterations in the *productive* balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7¶ **I**n Kennedy’s view the geopolitical consequences of an economic crisis or even decline would be transmitted through a nation’s inability to find adequate financial resources to simultaneously sustain economic growth and military power – the classic ‘guns vs butter’ dilemma.¶ Apart from such fiscal disempowerment of the state, economic under-performance would also reduce a nation’s attraction as a market, a source of capital and technology, and as a ‘knowledge power’. As power shifted from Europe to America, so did the knowledge base of the global economy. As China’s power rises, so does its profile as a ‘knowledge economy’.¶ Impressed by such arguments the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China’s political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.8¶ While China’s impressive economic performance and the consequent rise in China’s global profile has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington DC. We must expect a revival of interest in Kennedy’s arguments in the current context.¶ **A** historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the ‘square of power’ as the tax bureaucracy, the parliament, the national debt and the central bank. These four institutions of ‘fiscal empowerment’ of the state enable nations to project power by mobilizing and deploying financial resources to that end.9 ¶ Ferguson shows how vital sound economic management is to strategic policy and national power. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet empires and that of the United States of America. In an early comment on the present financial crisis, Ferguson wrote:¶ ‘We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US… It remains to be seen how quickly today’s financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America’s quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors*. …*as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient Oriental empires (not only the Ottoman but also the Persian and Chinese) to Western Europe. Today the shift is from the US – and other western financial centres – to the autocracies of the Middle East and East Asia.’10 ¶ An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union the financial crunch caused by the Afghan war came on top of years of economic under-performance and the loss of political legitimacy of the Soviet state. In a democratic society like the United States the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet state was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it.¶ Hence, one must not become an economic determinist and historic parallels need not always be relevant. Politics can intervene and offer solutions. Political economy and politics, in the form of Keynesian economics and the ‘New Deal’, did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today’s America remains to be seen.

#### Independently key to heg

**Gelb, 10** - currently president emeritus of the Council on Foreign Relations, (Leslie, Fashioning a Realistic Strategy for the Twenty-First Century,” Fletcher Forum of World Affairs vol.34:2 summer 2010 http://fletcher.tufts.edu/forum/archives/pdfs/34-2pdfs/Gelb.pdf)

**LESLIE H. GELB:** Power is what it always has been. It is the ability to get someone to do something they do not want to do by means of your resources and your position. It was always that. There is no such thing in my mind as “soft” power or “hard” power or “smart” power or “dumb” power. It is people who are hard or soft or smart or dumb. Power is power. And people use it wisely or poorly. Now, what has changed is the composition of power in international affairs. For almost all of history, international power was achieved in the form of military power and military force. Now, particularly in the last fifty years or so, it has become more and more economic. So power consists of economic power, military power, and diplomatic power, but the emphasis has shifted from military power (for almost all of history) to now, more economic power. And, as President Obama said in his West Point speech several months ago, our economy is the basis of our international power in general and our military power in particular. That is where it all comes from. Whether other states listen to us and act on what we say depends a good deal on their perception of the strength of the American economy. A big problem for us in the last few years has been the perception that our economy is in decline.

#### Heg solves extinction

**Barnett 2011** – Former Senior Strategic Researcher and Professor in the Warfare Analysis & Research Department, Center for Naval Warfare Studies, U.S. Naval War College, worked as the Assistant for Strategic Futures in the Office of Force Transformation in the DOD (3/7, Thomas, World Politics Review, “The New Rules: Leadership Fatigue Puts U.S., and Globalization, at Crossroads”, <http://www.worldpoliticsreview.com/articles/8099/the-new-rules-leadership-fatigue-puts-u-s-and-globalization-at-crossroads>, credit to LDK)

Events in Libya are a further reminder for Americans that we stand at a crossroads in our continuing evolution as the world's sole full-service superpower. Unfortunately, we are increasingly seeking change without cost, and shirking from risk because we are tired of the responsibility. We don't know who we are anymore, and our president is a big part of that problem. Instead of leading us, he explains to us. Barack Obama would have us believe that he is practicing strategic patience. But many experts and ordinary citizens alike have concluded that he is actually beset by strategic incoherence -- in effect, a man overmatched by the job.  It is worth first examining the larger picture: We live in a time of arguably the greatest structural change in the global order yet endured, with this historical moment's most amazing feature being its relative and absolute lack of mass violence. That is something to consider when Americans contemplate military intervention in Libya, because if we do take the step to prevent larger-scale killing by engaging in some killing of our own, we will not be adding to some fantastically imagined global death count stemming from the ongoing "megalomania" and "evil" of American "empire." We'll be engaging in the same sort of system-administering activity that has marked our stunningly successful stewardship of global order since World War II.  Let me be more blunt: As the guardian of globalization, the U.S. military has been the greatest force for peace the world has ever known. Had America been removed from the global dynamics that governed the 20th century, the mass murder never would have ended. Indeed, it's entirely conceivable there would now be no identifiable human civilization left, once nuclear weapons entered the killing equation.  But the world did not keep sliding down that path of perpetual war. Instead, America stepped up and changed everything by ushering in our now-perpetual great-power peace. We introduced the international liberal trade order known as globalization and played loyal Leviathan over its spread. What resulted was the collapse of empires, an explosion of democracy, the persistent spread of human rights, the liberation of women, the doubling of life expectancy, a roughly 10-fold increase in adjusted global GDP and a profound and persistent reduction in battle deaths from state-based conflicts.

### 2

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise

**Prothero 12** [Donald R. Prothero, Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, "How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO]

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### Causes extinction – war

Sawin 12 [Janet Sawin, Senior Director of the Energy and Climate Change Program at the WorldWatch Institute, Aug 2012, “Climate Change Poses Greater Security Threat than Terrorism]

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources.

#### Warming causes extinction

**Sify 2010 –** Sydney newspaper citing Ove Hoegh-Guldberg, professor at University of Queensland and Director of the Global Change Institute, and John Bruno, associate professor of Marine Science at UNC (Sify News, “Could unbridled climate changes lead to human extinction?”, <http://www.sify.com/news/could-unbridled-climate-changes-lead-to-human-extinction-news-international-kgtrOhdaahc.html>, WEA)

The findings of the comprehensive report: 'The impact of climate change on the world's marine ecosystems' emerged from a synthesis of recent research on the world's oceans, carried out by two of the world's leading marine scientists. One of the authors of the report is Ove Hoegh-Guldberg, professor at The University of Queensland and the director of its Global Change Institute (GCI). 'We may see sudden, unexpected changes that have serious ramifications for the overall well-being of humans, including the capacity of the planet to support people. This is further evidence that we are well on the way to the next great extinction event,' says Hoegh-Guldberg. 'The findings have enormous implications for mankind, particularly if the trend continues. The earth's ocean, which produces half of the oxygen we breathe and absorbs 30 per cent of human-generated carbon dioxide, is equivalent to its heart and lungs. This study shows worrying signs of ill-health. It's as if the earth has been smoking two packs of cigarettes a day!,' he added. 'We are entering a period in which the ocean services upon which humanity depends are undergoing massive change and in some cases beginning to fail', he added. The 'fundamental and comprehensive' changes to marine life identified in the report include rapidly warming and acidifying oceans, changes in water circulation and expansion of dead zones within the ocean depths. These are driving major changes in marine ecosystems: less abundant coral reefs, sea grasses and mangroves (important fish nurseries); fewer, smaller fish; a breakdown in food chains; changes in the distribution of marine life; and more frequent diseases and pests among marine organisms. Study co-author John F Bruno, associate professor in marine science at The University of North Carolina, says greenhouse gas emissions are modifying many physical and geochemical aspects of the planet's oceans, in ways 'unprecedented in nearly a million years'. 'This is causing fundamental and comprehensive changes to the way marine ecosystems function,' Bruno warned, according to a GCI release. These findings were published in Science

#### The IFR is the only way to reduce coal emissions sufficiently to avert the worst climate disasters

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "Why We Should Build an Integral Fast Reactor Now," 11/25/9) http://skirsch.wordpress.com/2009/11/25/ifr/

To prevent a climate disaster, we must eliminate virtually all coal plant emissions worldwide in 25 years. The best way and, for all practical purposes, the only way to get all countries off of coal is not with coercion; it is to make them want to replace their coal burners by giving them a plug-compatible technology that is less expensive. The IFR can do this. It is plug-compatible with the burners in a coal plant (see Nuclear Power: Going Fast). No other technology can upgrade a coal plant so it is greenhouse gas free while reducing operating costs at the same time. In fact, no other technology can achieve either of these goals. The IFR can achieve both.¶ The bottom line is that without the IFR (or a yet-to-be-invented technology with similar ability to replace the coal burner with a cheaper alternative), it is unlikely that we’ll be able to keep CO2 under 450 ppm.¶ Today, the IFR is the only technology with the potential to displace the coal burner. That is why restarting the IFR is so critical and why Jim Hansen has listed it as one of the top five things we must do to avert a climate disaster.[4]¶ Without eliminating virtually all coal emissions by 2030, the sum total of all of our other climate mitigation efforts will be inconsequential. Hansen often refers to the near complete phase-out of carbon emissions from coal plants worldwide by 2030 as the sine qua non for climate stabilization (see for example, the top of page 6 in his August 4, 2008 trip report).¶ To stay under 450ppm, we would have to install about 13,000 GWe of new carbon-free power over the next 25 years. That number was calculated by Nathan Lewis of Caltech for the Atlantic, but others such as Saul Griffith have independently derived a very similar number and White House Science Advisor John Holdren used 5,600 GWe to 7,200 GWe in his presentation to the Energy Bar Association Annual Meeting on April 23, 2009. That means that if we want to save the planet, we must install more than 1 GWe per day of clean power every single day for the next 25 years. That is a very, very tough goal. It is equivalent to building one large nuclear reactor per day, or 1,500 huge wind turbines per day, or 80,000 37 foot diameter solar dishes covering 100 square miles every day, or some linear combination of these or other carbon free power generation technologies. Note that the required rate is actually higher than this because Hansen and Rajendra Pachauri, the chair of the IPCC, now both agree that 350ppm is a more realistic “not to exceed” number (and we’ve already exceeded it).¶ Today, we are nowhere close to that installation rate with renewables alone. For example, in 2008, the average power delivered by solar worldwide was only 2 GWe (which is to be distinguished from the peak solar capacity of 13.4GWe). That is why every renewable expert at the 2009 Aspen Institute Environment Forum agreed that nuclear must be part of the solution. Al Gore also acknowledges that nuclear must play an important role.¶ Nuclear has always been the world’s largest source of carbon free power. In the US, for example, even though we haven’t built a new nuclear plant in the US for 30 years, nuclear still supplies 70% of our clean power!¶ Nuclear can be installed very rapidly; much more rapidly than renewables. For example, about two thirds of the currently operating 440 reactors around the world came online during a 10 year period between 1980 and 1990. So our best chance of meeting the required installation of new power goal and saving the planet is with an aggressive nuclear program.¶ Unlike renewables, nuclear generates base load power, reliably, regardless of weather. Nuclear also uses very little land area. It does not require the installation of new power lines since it can be installed where the power is needed. However, even with a very aggressive plan involving nuclear, it will still be extremely difficult to install clean power fast enough.¶ Unfortunately, even in the US, we have no plan to install the clean power we need fast enough to save the planet. Even if every country were to agree tomorrow to completely eliminate their coal plant emissions by 2030, how do we think they are actually going to achieve that? There is no White House plan that explains this. There is no DOE plan. There is no plan or strategy. The deadlines will come and go and most countries will profusely apologize for not meeting their goals, just like we have with most of the signers of the Kyoto Protocol today. Apologies are nice, but they will not restore the environment.¶ We need a strategy that is believable, practical, and affordable for countries to adopt. The IFR offers our best hope of being a centerpiece in such a strategy because it the only technology we know of that can provide an economically compelling reason to change.¶ At a speech at MIT on October 23, 2009, President Obama said “And that’s why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. … The nation that wins this competition will be the nation that leads the global economy. I am convinced of that. And I want America to be that nation, it’s that simple.”¶ Nuclear is our best clean power technology and the IFR is our best nuclear technology. The Gen IV International Forum (GIF) did a study in 2001-2002 of 19 different reactor designs on 15 different criteria and 24 metrics. The IFR ranked #1 overall. Over 242 experts from around the world participated in the study. It was the most comprehensive evaluation of competitive nuclear designs ever done. Top DOE nuclear management ignored the study because it didn’t endorse the design the Bush administration wanted.¶ The IFR has been sitting on the shelf for 15 years and the DOE currently has no plans to change that.¶ How does the US expect to be a leader in clean energy by ignoring our best nuclear technology? Nobody I’ve talked to has been able to answer that question.¶ We have the technology (it was running for 30 years before we were ordered to tear it down). And we have the money: The Recovery Act has $80 billion dollars. Why aren’t we building a demo plant?¶ IFRs are better than conventional nuclear in every dimension. Here are a few:¶ Efficiency: IFRs are over 100 times more efficient than conventional nuclear. It extracts nearly 100% of the energy from nuclear material. Today’s nuclear reactors extract less than 1%. So you need only 1 ton of actinides each year to feed an IFR (we can use existing nuclear waste for this), whereas you need 100 tons of freshly mined uranium each year to extract enough material to feed a conventional nuclear plant.¶ Unlimited power forever: IFRs can use virtually any actinide for fuel. Fast reactors with reprocessing are so efficient that even if we restrict ourselves to just our existing uranium resources, we can power the entire planet forever (the Sun will consume the Earth before we run out of material to fuel fast reactors). If we limited ourselves to using just our DU “waste” currently in storage, then using the IFR we can power the US for over 1,500 years without doing any new mining of uranium.[5]¶ Exploits our largest energy resource: In the US, there is 10 times as much energy in the depleted uranium (DU) that is just sitting there as there is coal in the ground. This DU waste is our largest natural energy resource…but only if we have fast reactors. Otherwise, it is just waste. With fast reactors, virtually all our nuclear waste (from nuclear power plants, leftover from enrichment, and from decommissioned nuclear weapons)[6] becomes an energy asset worth about $30 trillion dollars…that’s not a typo…$30 trillion, not billion.[7] An 11 year old child was able to determine this from publicly available information in 2004.

#### Alternative methods can’t solve warming

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "How Does Obama Expect to Solve the Climate Crisis Without a Plan?" 7/16/9) <http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html-http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html>

The ship is sinking slowly and we are quickly running out of time to develop and implement any such plan if we are to have any hope of saving the planet. What we need is a plan we can all believe in. A plan where our country's smartest people all nod their heads in agreement and say, "Yes, this is a solid, viable plan for keeping CO2 levels from touching 425ppm and averting a global climate catastrophe."¶ ¶ At his Senate testimony a few days ago, noted climate scientist James Hansen made it crystal clear once again that the only way to avert an irreversible climate meltdown and save the planet is to phase out virtually all coal plants worldwide over a 20 year period from 2010 to 2030. Indeed, if we don't virtually eliminate the use of coal worldwide, everything else we do will be as effective as re-arranging deck chairs on the Titanic.¶ ¶ Plans that won't work¶ ¶ Unfortunately, nobody has proposed a realistic and practical plan to eliminate coal use worldwide or anywhere close to that. There is no White House URL with such a plan. No environmental group has a workable plan either.¶ ¶ Hoping that everyone will abandon their coal plants and replace them with a renewable power mix isn't a viable strategy -- we've proven that in the U.S. Heck, even if the Waxman-Markey bill passes Congress (a big "if"), it is so weak that it won't do much at all to eliminate coal plants. So even though we have Democrats controlling all three branches of government, it is almost impossible to get even a weak climate bill passed.¶ ¶ If we can't pass strong climate legislation in the U.S. with all the stars aligned, how can we expect anyone else to do it? So expecting all countries to pass a 100% renewable portfolio standard (which is far far beyond that contemplated in the current energy bill) just isn't possible. Secondly, even if you could mandate it politically in every country, from a practical standpoint, you'd never be able to implement it in time. And there are lots of experts in this country, including Secretary Chu, who say it's impossible without nuclear (a point which I am strongly in agreement with).¶ ¶ Hoping that everyone will spontaneously adopt carbon capture and sequestration (CCS) is also a non-starter solution. First of all, CCS doesn't exist at commercial scale. Secondly, even if we could make it work at scale, and even it could be magically retrofitted on every coal plant (which we don't know how to do), it would require all countries to agree to add about 30% in extra cost for no perceivable benefit. At the recent G8 conference, India and China have made it clear yet again that they aren't going to agree to emission goals.¶ ¶ Saying that we'll invent some magical new technology that will rescue us at the last minute is a bad solution. That's at best a poor contingency plan.¶ ¶ The point is this: It should be apparent to us that we aren't going to be able to solve the climate crisis by either "force" (economic coercion or legislation) or by international agreement. And relying on technologies like CCS that may never work is a really bad idea.¶ ¶ The only remaining way to solve the crisis is to make it economically irresistible for countries to "do the right thing." The best way to do that is to give the world a way to generate electric power that is economically more attractive than coal with the same benefits as coal (compact power plants, 24x7 generation, can be sited almost anywhere, etc). Even better is if the new technology can simply replace the existing burner in a coal plant. That way, they'll want to switch. No coercion is required.

### 3

#### Argonne National Lab has a severe shortfall of quality scientists now – the best and brightest aren’t replacing retirees

Grossenbacher 08[CQ Congressional Testimony, April 23, 2008, John, Laboratory Director Idaho National Laboratory, “NUCLEAR POWER,” SECTION: CAPITOL HILL HEARING TESTIMONY, Statement of John J. Grossenbacher Laboratory Director Idaho National Laboratory, Committee on House Science and Technology, Lexis]

While all of the programs I've highlighted for you individually and collectively do much to advance the state of the art in nuclear science and technology, and enable the continued global expansion of nuclear power, there is a great area of challenge confronting nuclear energy's future. As with most other technologically intensive U.S. industries - it has to do with human capital and sustaining critical science and technology infrastructure. My laboratory, its fellow labs and the commercial nuclear power sector all face a troubling reality - a significant portion of our work force is nearing retirement age and the pipeline of qualified potential replacements is not sufficiently full. Since I'm well aware of this committee's interests in science education, I'd like to update you on what the Department and its labs are doing to inspire our next generation of nuclear scientists, engineers and technicians. Fundamentally, the Office of Nuclear Energy has made the decision to invite direct university partnership in the shared execution of all its R&D programs and will set aside a significant amount of its funds for that purpose. Already, nuclear science and engineering programs at U.S. universities are involved in the Office of Nuclear Energy's R&D, but this move will enable and encourage even greater participation in DOE's nuclear R&D programs. In addition, all NE-supported labs annually bring hundreds of our nation's best and brightest undergraduate and graduate students on as interns or through other mechanisms to conduct real research. For example, at INL we offer internships, fellowships, joint faculty appointments and summer workshops that focus on specific research topics or issues that pertain to maintaining a qualified workforce. This year, we are offering a fuels and materials workshop for researchers and a 10-week training course for engineers interested in the field of reactor operations. Last year, DOE designated INL's Advanced Test Reactor as a national scientific user facility, enabling us to open the facility to greater use by universities and industry and to supporting more educational opportunities. ATR is a unique test reactor that offers the ability to test fuels and materials in nine different prototypic environments operated simultaneously. With this initiative, we join other national labs such as Argonne National Laboratory and Oak Ridge National Laboratory in offering nuclear science and engineering assets to universities, industry and the broader nuclear energy research community. Finally, national laboratories face their own set of challenges in sustaining nuclear science and technology infrastructure - the test reactors, hot cells, accelerators, laboratories and other research facilities that were developed largely in support of prior missions. To obtain a more complete understanding of the status of these assets, the Office of Nuclear Energy commissioned a review by Battelle to examine the nuclear science and technology infrastructure at the national laboratories and report back later this year on findings and recommendations on a strategy for future resource allocation that will enable a balanced, yet sufficient approach to future investment in infrastructure.

#### The plan attracts the best and brightest back to Argonne – successful demonstration of IFR spurs collaborative nuclear interdisciplinary research

Blees 8 [Tom Blees 2008 “Prescription for the Planet: The painless remedy for our energy and environmental crises” Pg. 367]

21. Restart nuclear power development research at national labs like Argonne, concentrating on small reactor designs like the nuclear battery ideas discussed earlier. Given the cost and difficulty of extending power grids over millions of square miles of developing countries, the advantages of distributed generation in transforming the energy environment of such countries can hardly be exaggerated. It is a great pity that many of the physicists and engineers who were scattered when the Argonne IFR project was peremptorily terminated chose to retire. Rebuilding that brain trust should be, well, a no-brainer. If one but looks at the incredible challenges those talented people were able to meet, it seems perfectly reasonable to suppose that a focus on small sealed reactor development could likewise result in similar success. Some of those working on the AHTR and other seemingly unneeded projects could well transition to R&D that fits into the new paradigm. Japanese companies are already eager to build nuclear batteries, and there should be every effort to work in concert with them and other researchers as we develop these new technologies. The options this sort of collaborative research would open up for the many varied types of energy needs around the world would be incalculable.

#### Successful demonstration projects and collaborative interdisciplinary research is necessary to attract the best and brightest scientists to Argonne and fully complete products

**ANL 8** [Argonne National Laboratory INSTITUTIONAL PLAN FY2004-FY2008, operated by The University of Chicago for the¶ United States Department of Energy’s Office of Science]

Our planning is based on five key¶ assumptions:¶ • DOE’s national laboratories must act¶ increasingly as a synergistic system, with the¶ laboratories managing their collective¶ competencies, increasing their overall costeffectiveness, and partnering on major¶ initiatives among themselves and with the¶ private and academic sectors.¶ • Sponsors, regulators, and the public will¶ continue to require that we demonstrate¶ responsible corporate citizenship. This¶ imperative includes being a good and trustworthy neighbor, conducting operations costeffectively and responsibly, and meeting or¶ exceeding regulatory requirements.¶ • Argonne must compete on its merits for¶ federal funding, for the “best and brightest”¶ employees, and for the modern infrastructure¶ needed for future success. Important factors in¶ this competition will be scientific and¶ technological excellence, cost-effectiveness,¶ mission contributions, record of performance,¶ and a working environment that enables high¶ performance from a diverse and talented¶ workforce.¶ • Robust links with universities, industry,¶ federal laboratories, and the general scientific¶ and technical community (within the¶ United States and abroad) are essential if we¶ are to maintain our leadership and fully¶ exploit advances made throughout the world.¶ • Computing, computational science, and¶ communications and information technology¶ will advance rapidly, will become seamlessly¶ intertwined with experimental science, and¶ will thereby revolutionize many fields of¶ research and applications that are central to¶ the missions of DOE and Argonne.

#### Attracting leading scientists to Argonne key to successful development of the Advanced Photon Source

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Scientific Community¶ An enhanced catalyst research beamline with capabilities for in situ XAFS, powder¶ diffraction, and kinetics measurements would benefit the entire catalysis community,¶ i.e., government research laboratories, academia, and industry. The beamline and its¶ staff would also serve as a focal point for expanding catalyst research to other APS¶ beamlines using advanced techniques not routinely applied to catalyst systems, e.g.,¶ SAXS, XES, RIXS, and HERF spectroscopy. Development of these latter methods¶ would position the APS as a leader in this area and attract leading scientists from all¶ over the world. It is expected that new users would initially characterize their materials and identify appropriate systems for specialized techniques.¶ Fig. 4. Cell for in situ x-ray absorption studies of fuel cell¶ catalysts. Standard Fuel Cell Technologies cell hardware¶ was machined to allow x-ray fluorescence studies of cathode electrocatalysts in an operating membrane-electrode¶ assembly (fuel cell). (Argonne National Laboratory photograph)Throughout the U.S. and the world, there are countless research groups working to¶ develop the enabling material in fuel cell catalysis: an oxygen reduction electrocatalyst that is less expensive and more durable than platinum [36-38]. A few of these¶ groups utilize synchrotron-based x-ray techniques to characterize their electrocatalysts; however, these studies are almost exclusively in environments mimicking the¶ reactive environment or are ex situ. A notable exception is the catalyst development¶ effort being led by Los Alamos National Laboratory, which encompasses many approaches and involves many university and national laboratories. As part of this project, Argonne researchers have developed the capability to characterize catalysts¶ containing low-atomic-number elements in an operating fuel cell using XAFS at the¶ APS. Utilizing this cell (Fig. 4), Argonne scientists have determined the active site in¶ a cobalt-containing catalyst. This capability would be extremely useful to other catalyst development teams around the country and the world, and it is envisioned that a¶ dedicated APS electrocatalysis beamline could be designed and made available to¶ these teams. The neutron source at the National Institute of Standards and Technology (NIST) has a beamline dedicated to studies of water transport in fuel cells, which¶ has provided invaluable information for fuel cell materials design. The APS beamline¶ would be the catalyst counterpart to the NIST beamline.¶ A molecular-level understanding of the interactions and correlations that occur in solution and between solution phases is essential to building a predictive capability of a¶ metal ion’s solubility, reactivity, kinetics, and energetics. Until the recent availability¶ of tunable, high-energy x-rays this understanding has been significantly limited by¶ the absence of structural probes. The APS, with its high flux of high-energy x-rays, is¶ the ideal synchrotron source to provide this new information, which is critical to the¶ advancement of solution chemistry. The utility of high-energy x-rays is currently¶ being demonstrated as part of an APS Partner User Proposal (PUP-52), and has received high visibility, including an Inorganic Chemistry feature cover [34]. This effort¶ is interesting a cadre of solution chemists that, to date, have not been part of the user¶ base at synchrotron facilities. The extension of high-energy capabilities from simple¶ PDF experiments to more complex liquid-liquid interfaces is expected to significantly¶ broaden this new interest group into areas including soft-matter studies.

#### APS solves chemical industry

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Within solutions themselves, self-assembly and ordering of ions or molecules at interfaces is important in many biotic and abiotic processes. Phase-transfer catalysis,¶ pharmaceutical drug delivery, many electrochemical processes, nanoparticle synthesis, and numerous chemical reactions take place at the interface between two immiscible liquids. Important environmental processes that rely upon interactions at interfaces include tertiary oil recovery, solvent extraction of radionuclides from nuclear¶ waste, and permeation liquid membranes used for the cleanup of ions in the environment. For example, biological membranes at aqueous-aqueous boundaries are fundamental to cell chemistry and processes. In the area of separations science—a¶ cornerstone of the chemical industry—solvent extraction and other metals separations technologies rely heavily on the transfer of metal ions across an interface.¶ Significance of the APS¶ Understanding solution and materials chemistry requires knowledge of structure at¶ the atomic level. Most of the standard structural characterization tools provide highquality information on bulk, periodic, or crystalline materials. Equally high-quality¶ characterization is needed for amorphous materials, solutions, and complex nanostructures. Synchrotron-based techniques can now be used to characterize samples¶ irrespective of their state of crystallinity via different scattering and spectroscopic¶ methods. X-rays are providing structural details at length scales that encompass¶ local structure from about an ion to the long-range ordering present in well-formed¶ crystalline materials, and have found applications in solutions, glasses, liquids, poorquality crystals, powders (which can be multiphase), assemblies of micro-crystals, adsorbed surface layers, etc. Moreover, the evolution of structure under reaction¶ conditions is also an important feature of a catalytic system that needs to be investigated and understood. Techniques most often used for analysis of catalytic materials¶ include x-ray diffraction and scattering, pair distribution function (PDF), small-angle¶ scattering (SAXS) and x-ray absorption spectroscopy (EXAFS and x-ray absorption¶ near-edge fine structure, XANES).¶ Current APS techniques and potential upgrades in capabilities¶ Synchrotron x-ray powder diffraction (SXRPD) is a core competency for structural¶ analysis of catalytic nanoparticles. The major application of SXRPD is structural¶ analysis of new catalytic materials using Rietveld refinement (e.g., zeolites and mixed oxides). In recent years, there has also been much interest in in situ catalyst¶ research. Having a beamline with capabilities for in situ measurements would be¶ highly advantageous to the catalysis community, as many metallic nanoparticles are¶ highly oxidized in ambient air.

#### A strong chemical industry prevents extinction

**Baum ’99** (Rudy M., C&EN Washington, Chemical and Engineering News, Millennium Special Report, 12-6, http://pubs.acs.org/hotartcl/cenear/991206/7749spintro2.html)

Here is the fundamental challenge we face: The world's growing and aging population must be fed and clothed and housed and transported in ways that do not perpetuate the environmental devastation wrought by the first waves of industrialization of the 19th and 20th centuries. As we increase our output of goods and services, as we increase our consumption of energy, as we meet the imperative of raising the standard of living for the poorest among us, we must learn to carry out our economic activities sustainably. There are optimists out there, C&EN readers among them, who believe that the history of civilization is a long string of technological triumphs of humans over the limits of nature. In this view, the idea of a "carrying capacity" for Earth—a limit to the number of humans Earth's resources can support—is a fiction because technological advances will continuously obviate previously perceived limits. This view has historical merit. Dire predictions made in the 1960s about the exhaustion of resources ranging from petroleum to chromium to fresh water by the end of the 1980s or 1990s have proven utterly wrong. While I do not count myself as one of the technological pessimists who see technology as a mixed blessing at best and an unmitigated evil at worst, I do not count myself among the technological optimists either. There are environmental challenges of transcendent complexity that I fear may overcome **us and our** Earth before technological progress can come to our rescue. Global climate change, the accelerating destruction of terrestrial and oceanic habitats, the catastrophic loss of species across the plant and animal kingdoms—these are problems that are not obviously amenable to straightforward technological solutions. But I know this, too: Science and technology have brought us to where we are, and only science and technology, coupled with innovative social and economic thinking, can take us to where we need to be in the coming millennium. Chemists, chemistry, and the chemical industry—what we at C&EN call the chemical enterprise—will play central roles in addressing these challenges. The first section of this Special Report is a series called "Millennial Musings" in which a wide variety of representatives from the chemical enterprise share their thoughts about the future of our science and industry. The five essays that follow explore the contributions the chemical enterprise is making right now to ensure that we will successfully meet the challenges of the 21st century. The essays do not attempt to predict the future. Taken as a whole, they do not pretend to be a comprehensive examination of the efforts of our science and our industry to tackle the challenges I've outlined above. Rather, they paint, in broad brush strokes, a portrait of scientists, engineers, and business managers struggling to make a vital contribution to humanity's future. The first essay, by Senior Editor Marc S. Reisch, is a case study of the chemical industry's ongoing transformation to sustainable production. Although it is not well known to the general public, the chemical industry is at the forefront of corporate efforts to reduce waste from production streams to zero. Industry giants DuPont and Dow Chemical are taking major strides worldwide to manufacture chemicals while minimizing the environmental "footprint" of their facilities. This is an ethic that starts at the top of corporate structure. Indeed, Reisch quotes Dow President and Chief Executive Officer William S. Stavropolous: "We must integrate elements that historically have been seen as at odds with one another: the triple bottom line of sustainability—economic and social and environmental needs." DuPont Chairman and CEO Charles (Chad) O. Holliday envisions a future in which "biological processes use renewable resources as feedstocks, use solar energy to drive growth, absorb carbon dioxide from the atmosphere, use low-temperature and low-pressure processes, and produce waste that is less toxic." But sustainability is more than just a philosophy at these two chemical companies. Reisch describes ongoing Dow and DuPont initiatives that are making sustainability a reality at Dow facilities in Michigan and Germany and at DuPont's massive plant site near Richmond, Va. Another manifestation of the chemical industry's evolution is its embrace of life sciences. Genetic engineering is a revolutionary technology. In the 1970s, research advances fundamentally shifted our perception of DNA. While it had always been clear that deoxyribonucleic acid was a chemical, it was not a chemical that could be manipulated like other chemicals—clipped precisely, altered, stitched back together again into a functioning molecule. Recombinant DNA techniques began the transformation of DNA into just such a chemical, and the reverberations of that change are likely to be felt well into the next century. Genetic engineering has entered the fabric of modern science and technology. It is one of the basic tools chemists and biologists use to understand life at the molecular level. It provides new avenues to pharmaceuticals and new approaches to treat disease. It expands enormously agronomists' ability to introduce traits into crops, a capability seized on by numerous chemical companies. There is no doubt that this powerful new tool will play a major role in feeding the world's population in the coming century, but its adoption has hit some bumps in the road. In the second essay, Editor-at-Large Michael Heylin examines how the promise of agricultural biotechnology has gotten tangled up in real public fear of genetic manipulation and corporate control over food. The third essay, by Senior Editor Mairin B. Brennan, looks at chemists embarking on what is perhaps the greatest intellectual quest in the history of science—humans' attempt to understand the detailed chemistry of the human brain, and with it, human consciousness. While this quest is, at one level, basic research at its most pure, it also has enormous practical significance. Brennan focuses on one such practical aspect: the effort to understand neurodegenerative diseases like Alzheimer's disease and Parkinson's disease that predominantly plague older humans and are likely to become increasingly difficult public health problems among an aging population. Science and technology are always two-edged swords. They bestow the power to create and the power to destroy. In addition to its enormous potential for health and agriculture, genetic engineering conceivably could be used to create horrific biological warfare agents. In the fourth essay of this Millennium Special Report, Senior Correspondent Lois R. Ember examines the challenge of developing methods to counter the threat of such biological weapons. "Science and technology will eventually produce sensors able to detect the presence or release of biological agents, or devices that aid in forecasting, remediating, and ameliorating bioattacks," Ember writes. Finally, Contributing Editor Wil Lepkowski discusses the most mundane, the most marvelous, and the most essential molecule on Earth, H2O. Providing clean water to Earth's population is already difficult—and tragically, not always accomplished. Lepkowski looks in depth at the situation in Bangladesh—where a well-meaning UN program to deliver clean water from wells has poisoned millions with arsenic. Chemists are working to develop better ways to detect arsenic in drinking water at meaningful concentrations and ways to remove it that will work in a poor, developing country. And he explores the evolving water management philosophy, and the science that underpins it, that will be needed to provide adequate water for all its vital uses. In the past two centuries, our science has transformed the world. Chemistry is a wondrous tool that has allowed us to understand the structure of matter and gives us the ability to manipulate that structure to suit our own purposes. It allows us to dissect the molecules of life to see what makes them, and us, tick. It is providing a glimpse into workings of what may be the most complex structure in the universe, the human brain, and with it hints about what constitutes consciousness. In the coming decades, we will use chemistry to delve ever deeper into these mysteries and provide for humanity's basic and not-so-basic needs.

#### APS solves human embryonic development and fertility

**Xu 8** [“A Nuclear Receptor with Implications for a Host of Diseases”, Schoen W. Kruse, Kelly Suino-Powell, X. Edward Zhou, Jennifer E. Kretschman, Ross Reynolds, Clemens Vonrhein, Yong Xu, Liliang Wang, Sophia Y. Tsai, Ming-Jer Tsai, and H. Eric Xu, Press released of ‘Identification of COUP-TFII Orphan Nuclear Receptor as a Retinoic Acid–Activated Receptor,” PLoS Biology 6 (9), e277 (September 2008), Sept 25, 2008]

The crystal structure of the COUP-TFII receptor.¶ The molecular structure of a nuclear receptor that regulates the expression of specific genes within cells may serve as a drug target for diseases related to heart and blood-vessel development, human embryonic development, and female infertility, according to a team of researchers from the Van Andel Institute (VAI), Grand Valley State University, Global Phasing Ltd., and Baylor College of Medicine. The researchers, using an x-ray beamline at the U.S. Department of Energy’s Advanced Photon Source (APS) at Argonne National Laboratory, also found that the receptor, named COUP-TFII, is activated by retinoic acid, a form of Vitamin A.¶ "Not only does the structural information provide a basis for drug design in any diseases where COUP-TFII plays a role, but it also can provide insight into the entire subfamily of receptors to which COUP-TFII belongs, which could have implications for additional associated diseases," said Eric Xu of VAI, who with his colleagues authored the article on this study that was published in PLoS Biology.¶ The researchers determined the molecular structure of COUP-TFII via x-ray crystallography carried out at the DuPont-Northwestern-Dow Collaborative Access Team 5-ID-B,C,D beamline at the APS. Structural information such as this can help drug developers fit therapeutics more perfectly to the receptors they bind to for maximum potency, and can also aid in manipulating drugs to produce fewer side effects.¶ The findings could also have implications for cancer therapy. "Since COUP-TFII plays a role in embryonic blood vessel development, it might play a similar role in tumors and cancer growth," said Schoen Kruse, also from VAI and lead author of the study. "Formation of new blood supply in tumors is a stepping stone in the ability of cancers to grow and metastasize within the body."¶ The signal-triggering molecules, known as ligands — which activate nuclear receptors — have been discovered for most receptors, but not for a subset of “orphan” nuclear receptors whose ligand remains unknown. This study's finding that COUP-TFII is activated by retinoic acid is significant since the receptor previously belonged to this subset of orphan receptors.

#### Inevitable extinction otherwise

**Plimmer 11** [2011, Andrew Plimmer, “Are We Poisoning Ourselves Into Extinction?”, environmental activist from Australia]

Are We Poisoning Ourselves Into Extinction? ¶ Have you heard any of the disquieting reports on worldwide infertility and wondered if we are in the process of making the human race extinct with our continued usage of environmental toxins that affect both male and female infertility?¶ Besides affecting fertility, toxins have been proven to increase the risk of miscarriage in pregnant women.¶ If you aren’t up to speed on this scary topic, here are a few factoids that you may find startling, if not downright terrifying:¶ In 1938, only one half of 1% of males were functionally sterile. Functionally sterile means that the sperm count of a man is below 20 million viable sperm per milliliter of semen. Today, that percentage has increased 15 fold and is now between 8 and 12%. ¶ Dr. Cecil Jacobson ,Reproductive Genetics Center, Vienna, Virginia¶ Miscarriage is more likely to occur in women whose partners have a low sperm count. An average of 48% of the father’s sperm involved in female miscarriages were abnormal…some with two heads and two tails, for instance. By the same token, males who fathered normal pregnancies had 25% higher sperm counts and a mere 5% of abnormal sperm.¶ Drs. Mirjam Furuhjelm and Birgit Jonson ,Dept. of Obst. and Gyn., Sabbatsberg Hospital, Karolinska Institute, Stockholm, Sweden¶ In 1988, a study conducted by the United States National Center for Health Statistics estimated that of women aged 15-44, approximately 8.5% had a less than normal chance of becoming pregnant. ¶ Dr. Howard Jones , New England Journal of Medicine ,December 2, 1993 pg. 1710¶ Miscarriage rates are significantly higher among women living near agricultural areas where certain pesticides are used on crops. In fact, there is a huge 40% to 120% increase of miscarriage due to birth defects.¶ Epidemiology, March 2001¶ Pesticides are linked to male infertility. Studies have shown that infertile men are 10 times more likely to be employed in agricultural jobs using pesticides than men engaged in another, pesticide-free, line of work.¶ American Journal of Industrial Medicine, Vol. 24:587-592, 1983¶ The pesticide Chlordane was found to lower sperm count and damage the part of the male testicles that produce sperm. ¶ Drs. Khawla J. Balash, Muthanna A. Al-Omar ,Univ. of Baghdad, Biological Research Center¶ Approximately 75% of all American homes contain the pesticide Chlordane in the breathable air! ¶ Teratogenesis, Carcinogenesis, & Mutagenesis, Vol. 7:527-540, 1987¶ Women employed in microelectronics assembly using the cleaning solvents xylene, acetone, trichlorethylene, petroleum distillates and others have been found to have spontaneous abortion rates more than 4X normal. ¶ British Journal of Industrial Medicine, Vol. 47:400-404, 1990

### Solvency

#### Contention 4: Solvency

#### Loan guarantees solve – conservative arguments about cronyism and risk underestimation ignore 20 years of loan guarantee data to the contrary

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These programs typically run at very low cost to taxpayers. On average, every $1 allocated to loan and guarantee programs generates more than $99 of economic activity from individuals, businesses, nonprofits, and state and local governments, according to our analysis.¶ But in the wake of certain widely publicized credit blunders, most notably this past summer’s bankruptcy announcement from solar company Solyndra LLC, some have called into question Washington’s ability to manage financial risk. Conservative critics contend that the government is incapable of accurately pricing risk, and that political pressure encourages government agencies to routinely underestimate the risk to taxpayers when extending credit.¶ Government underpricing of risk is a convenient theory for free-market ideologues but it runs contrary to the overwhelming evidence.¶ Our review of federal government credit programs back to 1992 shows that on average the government is quite accurate in its risk pricing. In fact, the majority of government credit programs cost less than originally estimated, not more. Specifically, we found that:¶ Based on initial estimates over the past 20 years, the government expected its credit programs to cost taxpayers 79 cents for every $100 loaned or guaranteed. Based on recently updated data, those cost predictions were reasonably accurate but slightly underestimated. The current budgetary impact of these programs is about 94 cents per $100 loaned or guaranteed.¶ There’s little evidence that credit programs are biased toward underpricing risk. In fact, a little more than half of all nonemergency federal credit programs will cost the government less than what they are expected to over the life of the program.¶ The remainder is accounted for by the losses suffered by the Federal Housing Administration on loans made in 2008 during the peak of the housing crisis. Excluding that book of loans, all nonemergency federal credit programs cost slightly less than expected.¶ Conservative critics often portray a world in which government bureaucrats haphazardly issue loans and loan guarantees without considering taxpayer exposure to risk. That’s simply not the case. This issue brief explains how the government prices credit risk in the federal budget, how well those cost estimates have reflected reality over the years, and why the government is in a particularly good position to assume certain types of risk.¶ Budgeting for credit risk¶ Federal government agencies adhere to strict budget and accounting standards to carefully assess the risks and potential losses associated with credit programs. Here’s how it works.¶ Before an agency can issue any loans or loan guarantees, Congress must first authorize and allocate funding for the program. In most cases Congress starts by determining how much money the program will be authorized to guarantee or loan and then appropriates a certain percentage of that amount to cover the program’s expected cost to the government. That cost estimate—assessed by both the agency administering the program and the president’s Office of Management and Budget—takes into account expected repayments, defaults, recoveries, and any interest or fees collected over the life of the loan, adjusted to current dollars.¶ The net cost to the federal government as a percentage of total dollars loaned or guaranteed is known as the subsidy rate. As an example, say Congress approves a $100 million loan guarantee program within the Department of Agriculture. The department models expected market conditions and loan activity and then estimates a subsidy rate, which the Office of Management and Budget independently estimates as a check on the agency’s methodology. Let’s say the estimated subsidy rate is 0.75 percent. That means the government expects to take a net loss of 75 cents for every $100 it guarantees over the life of those loans. To cover expected losses on the $100 million in loan guarantees, the government sets aside $750,000 in a special account at the Treasury Department. This is similar to a loan loss reserve at a private bank.¶ Each subsequent year, the Office of Management and Budget and the agencies recalculate the subsidy rate to reflect actual loan performance, current economic conditions, and anything else administrators may have learned about a program. These revised numbers are reported in the president’s budget each year, which gives us a pretty good idea of each program’s “actual” costs and the government’s ability to assess financial risk.¶ If conservative claims were accurate in saying that the federal government cannot accurately price for risk, then one would expect the initial cost estimates to be significantly lower than the more recent re-estimates. Using the Department of Agriculture example above, if the critics were right, the re-estimated subsidy rate would presumably be much higher than 0.75 percent, and actual outlays would be higher than estimated. Let’s see how the government’s risk estimates actually stack up.¶ Government risk estimates are quite accurate¶ To test this theory, we analyzed credit data published in the president’s 2013 budget. We compared initial and updated cost estimates, also known as subsidy re-estimates, for each book of nonemergency loans and loan guarantees for each federal credit program since 1992, the first year for which comprehensive data are available.¶ We limit our analysis to nonemergency credit programs, omitting programs created in response to the recent financial crisis. This includes programs created through the Troubled Asset Relief Program—the so-called Wall Street rescue package passed by Congress at the height of the housing and financial crises—and the U.S. Department of the Treasury’s purchase of securities issued by the two troubled housing finance giants Fannie Mae and Freddie Mac. Both of these programs are temporary, atypically large, and are accounted for in the federal budget using different standards than all other credit programs.¶ If we had included these “emergency” programs, it would drastically skew the overall results—but skew them in favor of our basic argument. Based on our analysis of data published in the 2013 budget, these programs will cost the government about $130 billion less than initially expected. So their inclusion would make it seem as though the government significantly overestimated the cost of all credit programs over the past 20 years, which is not the case.¶ We also exclude any federal credit program that is not listed in the federal credit supplement of president’s budget, and any program that did not publish a subsidy re-estimate in the 2013 budget. We do this both because complete data are unavailable for these programs and because their costs are not recorded in the federal budget. Notably, this includes insurance programs through the Federal Deposit Insurance Corporation, mortgage guarantees offered by the two housing finance giants Fannie Mae and Freddie Mac (both now under government conservatorship), and guarantees on mortgage-backed securities offered by the government corporation Ginnie Mae.¶ Here’s what we found out about nonemergency federal credit programs. Federal agencies have issued $5.7 trillion worth of these loans or loan guarantees since 1992. Based on our analysis of initial estimates, the government expected these programs to cost taxpayers about 79 cents for every $100 loaned or guaranteed, or a 0.79 percent subsidy rate overall.¶ Of course, no one expects those estimates to be perfect. Many of these loans such as home mortgages or funding for large infrastructure projects take decades to pay back. Government financial analysts are charged with the difficult task of modeling payments, defaults, recoveries, and market conditions for the entire life of the loan, so some error has to be expected.¶ But as it turns out, the initial estimates weren’t very far off. The current budgetary impact of these credit programs is about 94 cents per $100 loaned or guaranteed, or a 0.94 percent subsidy rate, according to our analysis of updated subsidy estimates. To put that in a budgetary context, while issuing nearly $6 trillion in loans and guarantees over the past 20 years, the government initially predicted about $45 billion in total costs to taxpayers, but the actual costs were slightly higher—about $53 billion.¶ That difference—$8 billion over two decades or $400 million per year—might seem high at first. But it amounts to just 0.15 percent of the total dollars loaned or guaranteed by the government and 0.02 percent of all government spending over that period.(see Figure 1)¶ Of course, the federal government’s performance on individual programs varied substantially. Some programs overestimate risks, while others underestimate. But as mentioned above, some conservatives argue that political pressures cause the government to systemically underprice costs to taxpayers when issuing loans or guarantees.¶ The data show this to be untrue. Of the 104 nonemergency credit programs administered since 1992, our analysis shows that most have actually overestimated total subsidy costs. Fifty-six programs overpriced risk over their lifetimes, while 48 programs underpriced risk. (see Figure 2)¶ Our analysis only takes into account lifetime costs for each program, not the federal government’s ability to estimate costs on an individual year’s portfolio of loans. Indeed, critics often point to individual data points such as the Solyndra bankruptcy as evidence of the government’s inability to price financial risk. But what matters most is actually the net budgetary impact over time of these inaccuracies, which is what is measured in Figure 1.¶ Overall these overestimates and underestimates—whether across programs or in individual books of business—tend to roughly balance out in the long run, give or take a reasonable margin of error. As we show in the following section, however, all of these underestimated losses can actually be attributed to a single year of mortgage guarantees made at the height of the housing crisis.

#### Government support is vital-~--it overcomes financial barriers to nuclear that the market cannot

Yanosek 12 Kassia, entrepreneur-in-residence at Stanford University’s Steyer-Taylor Center for Energy Policy and Finance and a private equity investor in the energy sector as a principal at Quadrant Management and Founder of Tana Energy Capital LLC, " Financing Nuclear Power in the US", Spring, energyclub.stanford.edu/index.php/Journal/Financing\_Nuclear\_Power\_by\_Kassia\_Yanosek

Over the course of the last decade, it appeared that concerns about carbon emissions, aging coal fleets, and a desire for a diversified generation base were reviving the U.S. utility sector interest in building new nuclear plants. Government and companies worked closely on design certification for Generation III reactors, helping to streamline the licensing process. New loan guarantees from the federal government targeted for nuclear projects were created as part of the 2005 Energy Policy Act. Consequently, dozens of projects entered the planning stages. Following more than 30 years in which no new units were built, it looked as if the U.S. nuclear industry was making significant headway. However, it is yet to be seen how many new nuclear projects will actually make it beyond blueprints due to one of the largest barriers to new nuclear construction: financing risk. Large upfront capital costs, a complex regulatory process, uncertain construction timelines, and technology challenges result in a risk/return profile for nuclear projects that is unattractive for the capital markets without supplementary government or ratepayer support. To many investors, nuclear seems too capital-intensive. Nuclear energy has attractive qualities in comparison to other sources of electricity. A primary motivation to pursue the development of nuclear energy in the U.S. has been its low operating fuel costs compared with coal, oil, and gas-fired plants. Over the lifetime of a generating station, fuel makes up 78% of the total costs of a coal-fired plant. For a combined cycle gas-fired plant, the figure is 89%. According to the Nuclear Energy Institute, the costs for nuclear are approximately 14%, and include processing, enrichment, and fuel management/disposal costs. Today’s low natural gas prices have enhanced the prospects of gas-fired power, but utilities still remain cautious about over-investing in new natural gas generation given the historical volatility of prices. Furthermore, nuclear reactors provide baseload power at scale, which means that these plants produce continuous, reliable power to consistently meet demand. In contrast, renewable energies such as wind or solar are only available when the wind blows or the sun shines, and without storage, these are not suitable for large-scale use. Finally, nuclear energy produces no carbon emissions, which is an attractive attribute for utilities that foresee a carbon tax being imposed in the near future. Given nuclear’s benefits, one may wonder why no new nuclear units have been ordered since the 1970s. This hiatus is in great part due to nuclear’s high cost comparative to other alternatives, and its unique set of risks. As a result, financing nuclear has necessitated government involvement, as the cost of nuclear typically exceeds that of the cost of conventional generation technologies such as coal and natural gas fired generation on a levelized cost of energy (LCOE) basis. LCOE represents the present value of the total cost of building and operating a generating plant over its financial life, converted to equal annual payments and amortized over expected annual generation, and is used to compare across different power generation technologies. For both regulated utilities and independent power producers, nuclear is unattractive if the levelized cost exceeds that of other technologies, since state utility commissions direct regulated utilities to build new capacity using the technology with the lowest LCOE. Furthermore, capital costs are inherently high, ranging in the billions or tens of billions of dollars, and are compounded by financing charges during long construction times. Without government support, financing nuclear is currently notpossible in the capital markets. Recently, Constellation Energy and NRG separately pulled the plug on new multi-billion dollar plants, citing financing problems. Projects, however, will get done on a one-off basis. Southern Company’s Vogtle Plant in Eastern Georgia is likely to be the sponsor of the first new generation to be constructed, taking advantage of local regulatory and federal support. Two new reactors of next-generation technology are in the permitting stage, which will bring online 2,200 megawatts (MW) of new capacity, and will cost $14 billion. The project will take advantage of tax credits and loan guarantees provided in the 2005 Energy Policy Act.

#### And, loan guarantees solve nuclear expansion – shows investors the government has skin in the game, and incentivizes quick agency approval

Adams 10—Publisher of Atomic insights Was in the Navy for 33 years Spent time at the Naval Academy Has experience designing and running small nuclear plants (Rod, Concrete Action to Follow Strongly Supportive Words On Building New Nuclear Power Plants, atomicinsights.com/2010/01/concrete-action-to-follow-strongly-supportive-words-on-building-new-nuclear-power-plants.html)

Loan guarantees are important to the nuclear industry because the currently available models are large, capital intensive projects that need a stable regulatory and financial environment. The projects can be financed because they will produce a regular stream of income that can service the debt and still provide a profit, but that is only true if the banks are assured that the government will not step in at an inopportune time to halt progress and slow down the revenue generation part of the project. Bankers do not forget history or losses very easily; they want to make sure that government decisions like those that halted Shoreham, Barnwell’s recycling facility or the Clinch River Breeder Reactor program are not going to be repeated this time around. For the multi-billion dollar projects being proposed, bankers demand the reassurance that comes when the government is officially supportive and has some “skin in the game” that makes frivolous bureaucratic decisions to erect barriers very expensive for the agency that makes that decision. I have reviewed the conditions established for the guarantee programs pretty carefully – at one time, my company ([Adams Atomic Engines, Inc.](http://www.atomicengines.com)) was considering filing an application. The loan conditions are strict and do a good job of protecting government interests. They were not appropriate for a tiny company, but I can see where a large company would have less trouble complying with the rules and conditions. The conditions do allow low or no cost intervention in the case of negligence or safety issues, but they put the government on the hook for delays that come from bad bureaucratic decision making.

#### Plan is modeled internationally

**Blees et al** 11 (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) <http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/>

There are many compelling reasons to pursue the rapid demonstration of a full-scale IFR, as a lead-in to a subsequent global deployment of this technology within a relatively short time frame. Certainly the urgency of climate change can be a potent tool in winning over environmentalists to this idea. Yet political expediency—due to widespread skepticism of anthropogenic causes for climate change—suggests that the arguments for rolling out IFRs can be effectively tailored to their audience. Energy security—especially with favorable economics—is a primary interest of every nation.¶ The impressive safety features of new nuclear power plant designs should encourage a rapid uptick in construction without concern for the spent fuel they will produce, for all of it will quickly be used up once IFRs begin to be deployed. It is certainly manageable until that time. Burying spent fuel in non-retrievable geologic depositories should be avoided, since it represents a valuable clean energy resource that can last for centuries even if used on a grand scale.¶ Many countries are now beginning to pursue fast reactor technology without the cooperation of the United States, laboriously (and expensively) re-learning the lessons of what does and doesn’t work. If this continues, we will see a variety of different fast reactor designs, some of which will be less safe than others. Why are we forcing other nations to reinvent the wheel? Since the USA invested years of effort and billions of dollars to develop what is arguably the world’s safest and most efficient fast reactor system in the IFR, and since several nations have asked us to share this technology with them (Russia, China, South Korea, Japan, India), there is a golden opportunity here to develop a common goal—a standardized design, and a framework for international control of fast reactor technology and the fissile material that fuels them. This opportunity should be a top priority in the coming decade, if we are serious about replacing fossil fuels worldwide with sufficient pace to effectively mitigate climate change and other environmental and geopolitical crises of the 21st century.

#### IFR’s S-PRISM design is really safe

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

Metal Fuel: The Ultimate Safety Valve¶ One of the most important of the many superlatives of the IFR is its use of a metal fuel comprised of uranium, plutonium and zirconium, and the ingenious manner in which the Argonne team solved the problems of fuel expansion and fuel fabrication, as well as the potentially dangerous overheating scenario. Unlike the fuel fabrication of oxide-fueled reactors that requires the dimensions of the fuel pellets to be uniform to very exacting tolerances, the metal fuel for the IFR can be simply injected into molds and then cooled and inserted into metal tubes (cladding) with a great deal of dimensional tolerance, with a sodium bond filling any voids. If an accident situation occurs that would cause the core to overheat, such as a loss of coolant flow accident, the metal fuel itself will expand, causing neutron leakage to terminate the chain reaction, relying on nothing but the laws of physics.¶ The passive safety characteristics of the IFR were tested in EBR-II on April 3, 1986, against two of the most severe accident events postulated for nuclear power plants. The first test (the Loss of Flow Test) simulated a complete station blackout, so that power was lost to all cooling systems. The second test (the Loss of Heat Sink Test) simulated the loss of ability to remove heat from the plant by shutting off power to the secondary cooling system. In both of these tests, the normal safety systems were not allowed to function and the operators did not interfere. The tests were run with the reactor initially at full power.¶ In both tests, the passive safety features simply shut down the reactor with no damage. The fuel and coolant remained within safe temperature limits as the reactor quickly shut itself down in both cases. Relying only on passive characteristics, EBR-II smoothly returned to a safe condition without activation of any control rods and without action by the reactor operators. The same features responsible for this remarkable performance in EBR-II will be incorporated into the design of future IFR plants, regardless of how large they may be [xi].¶ While the IFR was under development, a consortium of prominent American companies led by General Electric collaborated with the IFR team to design a commercial-scale reactor based upon the EBR-II research. This design, currently in the hands of GE, is called the PRISM (Power Reactor Innovative Small Module). A somewhat larger version (with a power rating of 380 MWe) is called the S-PRISM. As with all new nuclear reactor designs (and many other potentially hazardous industrial projects), probabilistic risk assessment studies were conducted for the S-PRISM. Among other parameters, the PRA study estimated the frequency with which one could expect a core meltdown. This occurrence was so statistically improbable as to defy imagination. Of course such a number must be divided by the number of reactors in service in order to convey the actual frequency of a hypothetical meltdown. Even so, if one posits that all the energy humanity requires were to be supplies solely by IFRs (an unlikely scenario but one that is entirely possible), the world could expect a core meltdown about once every 435,000 years [xii]. Even if the risk assessment understated the odds by a factor of a thousand, this would still be a reactor design that even the most paranoid could feel good about.

#### IFR fuel can be obtained from seawater – makes energy infinite

Archambeauet all 11 [The Integral Fast Reactor (IFR): An Optimized Source for Global Energy Needs, Charles Archambeau, Science Council for Global Initiatives, Randolph Ware, Cooperative Institute for Research in Environmental Sciences, Tom Blees, National Center for Atmospheric Research, Barry Brook, University of Adelaide, Jerry Peterson, Argonne National Laboratory,¶ Yoon Chang, University of Colorado, February 2011]

The pyroprocessor unit can be used as a stand-alone system to process LWR waste from¶ any open cycle reactor into fuel for IFR closed cycle reactors. The depleted Uranium¶ produced by the enrichment of Uranium ore can also be processed to generate additional¶ IFR fuel. The current amount of LWR waste, plus the amount of depleted Uranium in¶ stock piles world-wide, is sufficient to supply fuel to all the IFR plants needed and in fact¶ to supply the world's required energy for about 1000 years.3 The problem of storage of¶ current LWR waste and depleted Uranium waste from refining of mined Uranium is¶ therefore solved by pyroprocessor generation of IFR fuel, along with a relatively small¶ mass of short-lived fission products which can be easily and safely stored. Uranium can¶ also be extracted from sea water using IFR power sources (see, for example, Cohen, 1983).¶ Because Uranium is constantly added to seawater by erosion processes, then the IFR fuel¶ source is effectively unlimited. Therefore, IFR power plants do not require fuel from¶ regular mining operations, as does a LWR powered plant, but can use pyroprocessor¶ generated fuel essentially indefinitely. In this sense the IFR is a "renewable" energy source¶ which can be expanded, essentially indefinitely, to meet demand.

#### Manhattan Project approach key to catalyze quick investment in IFRs – perception is non-unique, there is government investment now

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Q. If this is really so good, how come GE isn't building S-PRISM on their own nickel?¶ Nobody wants to risk it since it isn't a slam dunk. You don't get a reward if you solve global warming. And government funding doesn't seem to be so easy. DOE tried to get funding for GNEP (which included IFR technology) and got shot down (so far).¶ GE is a large conservative corporation. They already service a fleet of lightwater reactors, are building more of them around the world, and have the promise of yet more. It's hard enough in this country to move into new levels of reactor technology without trying to leapfrog straight into the 4th generation. Their 3rd generation ESBWR is in the 5th round of NRC certification, whereas the S-PRISM (a souped up and more developed version of the PRISM) isn't at the starting gate. These things take years at the glacial pace of the NRC, though of course if President Obama decided to go all Manhattan project on it we could most definitely get there quickly enough. If GE started pushing 4th generation breeder reactors, can you imagine the hue and cry from the antie groups? What's their incentive to do that? If they're convinced that ultimately we'll end up at 4th generation reactors anyway and they can make plenty of dough and keep a low profile just taking the go slow approach, don't you imagine that's exactly what they'll do? Besides, conceivably another country with whom we have nuclear technology sharing agreements might very well certify and build it before the NRC ever gets out of the starting gate, which would make it much easier for the eventual NRC certification. Q. If this is really so good, how come someone in government isn't trying to get it restarted?¶ The DOE is attempting to resuscitate fast-reactor technology, as part of the GNEP (Global Nuclear Energy Partnership) initiative. See¶ http://www.gnep.energy.gov/gnepPRs/gnepPR011007.html, and http://www.gnep.energy.gov/.¶ The IFR is one form of fast-reactor technology (metallic fuel with pyroprocessing), but there are others -- inferior, according to the IFR scientists. The important thing these days is to get the U.S. back into a leadership role in the development and management of nuclear power, recognizing that recycling in fast reactors is necessary if the long-lived waste is to be consumed, and if the full energy potential of the uranium is to be exploited. The GNEP would resuscitate fast-reactor technology in this country.

## 2ac

### AT: Cuts

#### Federal budget actually ended up preserving Argonne

Williamson 11 (Lauren serves as associate regional editor for several Patch.com sites in the near-west Chicago suburbs. She came to Patch from InsideCounsel, a legal magazine where she worked as managing editor)

(4/15/11 Federal Budget Agreement Preserves Argonne Funding http://darien-il.patch.com/articles/federal-budget-agreement-preserves-argonne-funding)

While the federal government nearly shut down last week amid legislators’ inability to agree on a 2011 budget, the main question locally was how the bill that resulted from those talks would impact funding at Argonne National Laboratory.

In February, the House of Representatives voted to approve a spending bill that would have slashed key funding sources for the Darien-area energy lab.

Argonne officials estimated the proposed cuts would have forced it to layoff about one-third of its 3,000 employees. Fermilab, in Batavia, would have reportedly had to trim one-quarter of its staff.

But when both the House and Senate voted on a final compromise bill Thursday, Argonne’s funding emerged largely intact, averting a scenario Sen. Dick Durbin, D-IL, said would devastate U.S. innovation.

The final budget funds the Office of Science at nearly $4.9 billion, an increase of $866 million over what House Republicans proposed in February’s bill.

“This is good news for Fermilab, Argonne and the communities surrounding the labs in Batavia and DuPage County,” Durbin said Wednesday as Congress neared its vote on the compromise. “The current budget agreement keeps America’s commitment to investing in innovative research while cutting spending by over $78 billion.”

### 2ac prolif bad

#### Prolif turns conventional war – causes aggression

Kroenig, 12 [May 26th, Matthew Kroenig: Assistant Professor of Government, Georgetown University and Stanton Nuclear Security Fellow, Council on Foreign Relations, The History of Proliferation Optimism: Does It Have A Future? Prepared for the Nonproliferation Policy Education Center, <http://www.npolicy.org/article.php?aid=1182&tid=30>]

Regional instability: The spread of nuclear weapons also emboldens nuclear powers contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from other states, but states with nuclear weapons can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the “stability-instability paradox” maintain that stability at the nuclear level contributes to conventional instability.[[1]](#footnote-1)[64] Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.[[2]](#footnote-2)[65] Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.[[3]](#footnote-3)[66] Currently, Iran restrains its foreign policy because it fears a major military retaliation from the United States or Israel, but with nuclear weapons it could feel free to push harder. A nuclear-armed Iran would likely step up support to terrorist and proxy groups and engage in more aggressive coercive diplomacy. With a nuclear-armed Iran increasingly throwing its weight around in the region, we could witness an even more crisis prone Middle East. And in a poly-nuclear Middle East with Israel, Iran, and, in the future, possibly other states, armed with nuclear weapons, any one of those crises could result in a catastrophic nuclear exchange. Nuclear proliferation can also lead to regional instability due to preventive strikes against nuclear programs. States often conduct preventive military strikes to prevent adversaries from acquiring nuclear weapons. Historically, the United States attacked German nuclear facilities during World War II, Israel bombed a nuclear reactor in Iraq in 1981, Iraq bombed Iran’s Bushehr reactors in the Iran-Iraq War in the 1980s and Iran returned the favor against an Iraqi nuclear plant, a U.S.-led international coalition destroyed Iraq’s nuclear infrastructure in the first Gulf War in 1991, and Israel bombed a Syrian nuclear reactor in 2007. These strikes have not led to extensive conflagrations in the past, but we might not be so lucky in the future. At the time of writing in 2012, the United States and Israel were polishing military plans to attack Iran’s nuclear program and some experts maintain that such a strike could very well lead to a wider war in the Middle East.

#### Prolif deterrence theory fails – no guarantee of peace.

**Asal & Beardsley, 2009**

[Victor, Assistant Prof. Pol. Sci. – SUNY Albany, and Kyle, Assistant Prof. Pol. Sci. – Emory U., Conflict Management and Peace Science, “Nuclear Weapons as Shields\*”, 26:3, Sage]

While we do not attempt to resolve the debate between proliferation optimists and pessimists, there are two notable implications to that debate. First, nuclear weapons do confer observable benefits to the possessors by making them less likely to be targets of violent aggression. This helps further explain why states bear considerable costs to achieve them. Note however, that nuclear weapons do not make states completely immune to hostile acts of aggression, as evident in the Israeli–Arab and India–Pakistan cases. Future studies might better assess crisis behavior that is “off the equilibrium path” from the logic presented here to understand under which situations states bear considerable risks by using violent aggression against a nuclear state. The second implication is that proliferation does not necessarily translate into either greater stability or net utility gains in the international system. We demonstrate that proliferation is undesirable for both other non-nuclear states and members already in the nuclear club. Both types of states will lament the loss in ability to use heavy handed coercive diplomacy. Moreover, the attempt at proliferation itself appears to be destabilizing to the international system as the nuclear program states tend to be the target and source of much hostility. We found that program states have some heightened tendencies toward aggression, despite the incentives to lie low during the development stage. This is puzzling and a potentially fertile topic of future study.

#### Prolif causes a chain reaction – history proves – the impact is nuke war

Kroenig, 12 [May 26th, Matthew Kroenig: Assistant Professor of Government, Georgetown University and Stanton Nuclear Security Fellow, Council on Foreign Relations, The History of Proliferation Optimism: Does It Have A Future? Prepared for the Nonproliferation Policy Education Center, <http://www.npolicy.org/article.php?aid=1182&tid=30>]

Further proliferation. Nuclear proliferation poses an additional threat to international peace and security because it causes further proliferation. As former Secretary of State George Schultz once said, “proliferation begets proliferation.”[[4]](#footnote-4)[69] When one country acquires nuclear weapons, its regional adversaries, feeling threatened by its neighbor’s new nuclear capabilities, are more likely to attempt to acquire nuclear weapons in response. Indeed, the history of nuclear proliferation can be read as a chain reaction of proliferation. The United States acquired nuclear weapons in response to Nazi Germany’s crash nuclear program. The Soviet Union and China acquired nuclear weapons to counter the U.S. nuclear arsenal. The United Kingdom and France went nuclear to protect themselves from the Soviet Union. India’s bomb was meant to counter China and it, in turn, spurred Pakistan to join the nuclear club. Today, we worry that, if Iran acquires nuclear weapons, other Middle Eastern countries, such as Egypt, Iraq, Turkey, and Saudi Arabia, might desire nuclear capabilities, triggering an arms race in a strategically important and volatile region. Of course, reactive proliferation does not always occur. In the early 1960s, for example, U.S. officials worried that a nuclear-armed China would cause Taiwan, Japan, India, Pakistan, and other states to acquire nuclear weapons.[[5]](#footnote-5)[70] In hindsight, we now know that they were correct in some cases, but wrong in others. Using statistical analysis, Philipp Bleek has shown that reactive proliferation is not automatic, but that rather, states are more likely to proliferate in response to neighbors when three conditions are met 1) there is an intense security rivalry between the two countries, 2) the potential proliferant state does not have a security guarantee from a nuclear-armed patron 3) and the potential proliferant state has the industrial and technical capacity to launch an indigenous nuclear program.[[6]](#footnote-6)[71] In other words, reactive proliferation is real, but it is also conditional. If Iran enters the nuclear club, therefore, it is likely that some, but not all, of the countries that we currently worry about will eventually follow suit and become nuclear powers. We should worry about the spread of nuclear weapons in every case, therefore, because the problem will likely extend beyond that specific case. As Wohlstetter cautioned decades ago, proliferation is not an N problem, but an N+1 problem. Further nuclear proliferation is not necessarily a problem, of course, if the spread of nuclear weapons is irrelevant or even good for international politics as obsessionists and optimists protest. But, as the above discussion makes clear, nuclear proliferation, and the further nuclear proliferation it causes, increases the risk of nuclear war and nuclear terrorism, emboldens nuclear-armed states to be more aggressive, threatens regional stability, constrains U.S. freedom of action, and weakens America’s alliance relationships, giving us all good reason to fear the spread of nuclear weapons.

#### Prolif is uneven – small arsenals don’t solve

Narang, 12 [VIPIN NARANG is an Assistant Professor of Political Science at MIT and member of MIT's Security Studies Program. He received his Ph.D. from the Department Journal of Conflict Resolution July 9, 2012 0022002712448909, p. sage Journals]

Conclusion¶ These findings have important implications for our understanding of nuclear deterrence and nuclear proliferation. First, they overturn a central belief in international relations and nuclear deterrence theory that the acquisition of even a minimal nuclear capability radically improves a regional state's ability to deter conventional conflict. The Cold War experience left it unclear as to what it precisely takes to deter conflict. The regional nuclear powers, however, which have had to face constrained decisions about how to allocate their deterrent power, illustrate that states must explicitly orient their nuclear forces to deter conventional conflict in order to expe- rience reduced attacks. The mere possession of nuclear weapons or even second- strike forces alone seems incapable of providing systematic deterrence against con- ventional attacks. There is no magical deterrent benefit against conventional conflict generated by existential, catalytic, or assured retaliatory postures.¶ To reap a significant deterrent effect against conventional conflict, regional states must—for better or worse—explicitly orient their nuclear forces to do so by adopting an asymmetric escalation posture. This posture undoubtedly carries with it other sig- nificant risks, such as severe command and control pressures and an attendant increase in the risk of inadvertent nuclear use (Sagan 1995). Furthermore, states with this posture have strong incentives to undermine the so-called nuclear tabooin order to keep their nuclear threats credible and may do so in ways that risk their own, or international, security (Tannenwald 2008). However, the findings in this article pro- vide a strong clue as to why states may be willing to run these risks: the significant deterrence benefit that this posture provides. All of this suggests that, theoretically, scholars should cease treating nuclear weapons states as equivalent. The fact that nuclear powers have adopted widely varying nuclear postures that have radically dif- ferent effects on international conflict calls for a revision to our thinking about how conflict can be deterred with nuclear weapons. ror policy makers, these findings suggest that, in addition to addressing a state s initial march toward nuclear weapons, more attention ought to be paid to how regional states operationalize their nuclear forces once they cross the threshold. If it is nuclear posture, not simply nuclear possession, that generates the patterns of regional conflict around a particular regional nuclear power, practitioners may need to reassess their expectations of the frequency and character of conflict in regions with nuclear powers. It also means that the march toward nuclearization, while important, is not the only process that can be targeted by nonproliferation efforts. Even after a regional power has obtained nuclear weapons, the international commu- nity may be able to shape a state's choice of posture. For example, the perceived availability of the United States as a patron state is critical to the selection of the cat- alytic posture. In other instances, there might also be good reasons and ways to push a regional power that is tempted to adopt an asymmetric escalation posture to adopt an assured retaliation posture instead, and minimize the emphasis it places on nuclear weapons for its day-to-day conventional defense (Sechser and Fuhrmann, n.d.).¶ The fundamental point is that nuclear postures matter. Nuclear weapons may deter, but they deter unequally**.** Moreover, both theoretically and empirically, it seems to take more to deter conventional conflict than is generally appreciated. This finding ought to influence how we think about the emerging nuclear landscape and about what it means for international conflict.¶

### Warming Adv – AT: Timeframe 2AC

#### We can build them really quickly

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

How Fast Can We Build Them?¶ During France’s nuclear building boom they built an average of six nuclear power plants per year, culminating in a situation that provides them with about 80% of their electrical needs while making electricity their fourth-largest export earner. Gross Domestic Product (GDP) can be used as a rough guide to what a given country can financially bear for such a project, keeping in mind that France proceeded without the sense of urgency that the world today should certainly be ready to muster. There are six countries with higher GDPs than France, all of whom already possess the technology to build fast reactors: USA, China, Japan, India (they’re building one now), Germany, and the United Kingdom. Add Canada and Russia (which already has a commercial fast reactor running and is planning more), then tally up the GDP of these eight countries. At the rate of 6 plants per year (~ 1GW each) at the equivalent of France’s GDP, these countries alone could afford to build about 117 power plants per year, even without any greater urgency than the French brought to bear on their road to energy independence.¶ Consider that there are about 400 nuclear power plants in the world today. At this entirely feasible rate of construction we could more than double the planet’s nuclear capacity in just four years. Remember, the French accomplished their transformation with non-modular, albeit standardized, Gen II designs. Modular construction, passive safety systems, and factory fabrication, divided among companies all over the planet, could realistically convert the planet’s electricity production to virtually all nuclear in a couple decades, with abundant surplus electricity for ancillary uses such as desalination and the production of liquid fuels such as ammonia.

### Positive Feedbacks 2AC

#### The best studies show feedbacks are historically positive

Science Daily 6 **–** based on research by the DOE's Climate Change Research Division and the National Science Foundation (5/22, "Feedback Loops In Global Climate Change Point To A Very Hot 21st Century", http://www.sciencedaily.com/releases/2006/05/060522151248.htm, WEA)

Studies have shown that global climate change can set-off positive feedback loops in nature which amplify warming and cooling trends. Now, researchers with the Lawrence Berkeley National Laboratory (Berkeley Lab) and the University of California at Berkeley have been able to quantify the feedback implied by past increases in natural carbon dioxide and methane gas levels. Their results point to global temperatures at the end of this century that may be significantly higher than current climate models are predicting.

Using as a source the Vostok ice core, which provides information about glacial-interglacial cycles over hundreds of thousands of years, the researchers were able to estimate the amounts of carbon dioxide and methane, two of the principal greenhouse gases, that were released into the atmosphere in response to past global warming trends. Combining their estimates with standard climate model assumptions, they calculated how much these rising concentration levels caused global temperatures to climb, further increasing carbon dioxide and methane emissions, and so on.

“The results indicate a future that is going to be hotter than we think,” saidMargaret Torn, who heads the Climate Change and Carbon Management program for Berkeley Lab’s Earth Sciences Division, and is an Associate Adjunct Professor in UC Berkeley’s Energy and Resources Group. She and John Harte, a UC Berkeley professor in the Energy and Resources Group and in the Ecosystem Sciences Division of the College of Natural Resources, have co-authored a paper entitled: Missing feedbacks, asymmetric uncertainties, and the underestimation of future warming, which appears in the May, 2006 issue of the journal Geophysical Research Letters (GRL).

In their GRL paper, Torn and Harte make the case that the current climate change models, which are predicting a global temperature increase of as much as 5.8 degrees Celsius by the end of the century, may be off by nearly 2.0 degrees Celsius because they only take into consideration the increased greenhouse gas concentrations that result from anthropogenic (human) activities.

“If the past is any guide, then when our anthropogenic greenhouse gas emissions cause global warming, it will alter earth system processes, resulting in additional atmospheric greenhouse gas loading and additional warming,” said Torn.

Torn is an authority on carbon and nutrient cycling in terrestrial ecosystems, and on the impacts of anthropogenic activities on terrestrial ecosystem processes. Harte has been a leading figure for the past two decades on climate-ecosystem interactions, and has authored or co-authored numerous books on environmental sciences, including the highly praised Consider a Spherical Cow: A Course in Environmental Problem Solving.

### Carbon Tax CP

#### Carbon taxes fail – countries say no – try or die for new tech

Hargraves, 12 [July, Robert, Robert Hargraves has written articles and made presentations about the liquid fluoride thorium reactor and energy cheaper than from coal – the only realistic way to dissuade nations from burning fossil fuels. His presentation “Aim High” about the technology and social benefits of the liquid fluoride thorium reactor has been presented to audiences at Dartmouth ILEAD, Thayer School of Engineering, Brown University, Columbia Earth Institute, Williams College, Royal Institution, the Thorium Energy Alliance, the International Thorium Energy Association, Google, the American Nuclear Society, and the Presidents Blue Ribbon Commission of America’s Nuclear Future. With coauthor Ralph Moir he has written articles for the American Physical Society Forum on Physics and Society: Liquid Fuel Nuclear Reactors (Jan 2011) and American Scientist: Liquid Fluoride Thorium Reactors (July 2010). Robert Hargraves is a study leader for energy policy at Dartmouth ILEAD. He was chief information officer at Boston Scientific Corporation and previously a senior consultant with Arthur D. Little. He founded a computer software firm, DTSS Incorporated while at Dartmouth College where he was assistant professor of mathematics and associate director of the computation center. He graduated from Brown University (PhD Physics 1967) and Dartmouth College (AB Mathematics and Physics 1961). THORIUM: energy cheaper than coal, ISBN: 1478161299, purchased online at Amazon.com]

New energy technology can solve our environmental issues. Prof. Jeffrey Sachs, Director of the Columbia Earth Institute and advisor to the UN Secretary-General, is an economist who advocates new energy technologies over carbon taxes. He writes in Scientific American, “Technology policy lies at the core of the climate change challenge... If we try to restrain emissions without a fundamentally new set of technologies, we will end up stifling economic growth, including the development prospects for billions of people... We will need much more than a price on carbon ... technologies developed in the rich world will need to be adopted rapidly in poorer countries.” Nations resist carbon taxes that would increase the cost of energy from burning coal, because the taxes will impede economic development. Much of the contention in attempted climate treaty negotiations is from proposals for OECD nations to pay billions of dollars to developing nations to help them reduce their current and future net C02 emissions. There is a better solution - energy cheaper than coal. If new technologies such as the liquid fluoride thorium reactor undercut coal economics, nations will forego coal power plants in their own economic self-interest. There is a clear economic tipping point here, set by the cost of coal electricity. Success is a new energy technology that provides power below this coal price point. Contentious international treaty negotiations and economically burdensome taxes will not be needed

#### No investment or solvency for renewables now

Floyd, 9/28/12 [The Gadsden Times, director of United Kingdom manufacturing, Goodyear Tire & Rubber Co., vice president of manufacturing and international operations, General Tire & Rubber Co., and director of manufacturing, Chrysler Corp, <http://www.gadsdentimes.com/article/20120928/NEWS/120929802>]

Energy contributions by solar and wind to the U.S. power grid are miniscule when compared to coal, oil and gas, hydro and nuclear. In addition, the renewable energies are not cost effective and it is doubtful they will be.¶ In a recent article in The Gadsden Times, a writer complained that one of the major issues for wind and solar was states lagging in incentives for solar and wind. ¶ Was the writer joking, or did he not understand that huge governmental subsidies for solar and wind power come from taxpayer dollars? ¶ The U.S. Department of Energy reported that federal subsidies for solar are $775 per megawatt hour and for wind $57 per megawatt hour. Conversely, subsidies for oil and gas are $0.64 cents per megawatt hour, hydro power was $0.82 cents, coal $0.64 cents and nuclear $3.14 per megawatt hour. The difference in the subsidy for wind and solar versus traditional energy sources is obscene.¶ In 2011 the wind turbine industry received $5 billion in subsidies, in spite of the fact it produced only 2.3 percent of the total energy used in the United States. ¶ The Wall Street Journal reported in its Aug. 18 opinion page that for every tax dollar that goes to coal, oil and natural gas, wind gets $88 and solar $1,212. Subsidy comparisons don’t consider that the oil, coal,and natural gas industries paid more than $10 billion in taxes in 2009. Wind and solar are net drains on the United States Treasury.¶ The Journal suggested that maybe it is time to eliminate all federal subsidy programs for the energy industry. This is a proposal that should be taken very seriously. Why subsidize industries that historically generate huge profits? ¶ An Indiana newspaper reported that the company E-on Climate & Renewables is in a race against time for construction of 125 wind turbines in the Tipton, Ind., area. E-on is concerned federal subsidies they now enjoy will expire at the end of 2012. That’s unlikely because subsidies for wind and solar have been around since 1992 and have been extended seven times.¶ E-on has stated that each wind turbine will generate enough electrical power for 350 homes. So it would follow that 125 turbines will generate enough power to supply 43,750 homes. This is more than enough electrical power for all of Tipton and Kokomo, Ind.¶ The problem is the cost of the power. If the two communities had to pay for the power without taxpayer help, it would bankrupt every family living in the two communities.¶ What about times when there is no wind to power the turbines? Would these communities have to supplement electrical needs with power from alternative sources?¶ As utilization goes down for traditional electrical suppliers, unit costs go up. This means that alternative power supplied by traditional sources would also increase in cost. Tipton and Kokomo would be caught in a “Catch 22.” Implementation of wind turbines is a loser for the American taxpayer until the supplies of coal, natural gas and oil are depleted. Even then new nuclear power plants could supply 90 percent or more of the United States demand. ¶ Wind farms are “feel-good projects” with enormous associated costs to the American taxpayer. For irrelevance, wind farms are only exceeded by the solar industry. Sometimes, it is not good to be No. 1. ¶ To answer the question are American taxpayers lagging in incentives for renewable energy sources? I don’t think so.¶ I understand startup costs and the time it takes to establish appropriate operating numbers. Wind and solar power are far removed from the realm of cost effectiveness. ¶ There is much doubt wind and solar will be more than a drop in the ocean in relation to contributing to power requirements for the United States.

### Overpop Add-on

#### The plan solves overpopulation

Hargraves, 12 [July, Robert, Robert Hargraves has written articles and made presentations nuclear power; his presentation “Aim High” been presented to audiences at Dartmouth ILEAD, Thayer School of Engineering, Brown University, Columbia Earth Institute, Williams College, Royal Institution, the Thorium Energy Alliance, the International Thorium Energy Association, Google, the American Nuclear Society, and the Presidents Blue Ribbon Commission of America’s Nuclear Future; with coauthor Ralph Moir he has written articles for the American Physical Society Forum on Physics; study leader for energy policy at Dartmouth ILEAD; chief information officer at Boston Scientific Corporation and previously a senior consultant with Arthur D. Little; Dartmouth assistant professor of mathematics and associate director of the computation center; graduated from Brown University (PhD Physics 1967) and Dartmouth College (AB Mathematics and Physics 1961). THORIUM: energy cheaper than coal, ISBN: 1478161299, purchased online at Amazon.com]

Population stability Ending energy poverty is key to achieving modest prosperity in the developing world. Microsoft founder and philanthropist Bill Gates remarked: "If you want to improve the situation of the poorest two billion on the planet, having the price of energy go down substantially is about the best thing you could do for them. ... Energy is the thing that allowed civilization over the last 220 years to dramatically change everything.” Ending energy poverty leads to a sustainable population. $50,000 ; i , ; I 82 nations with populations > \* I over 10 million. $40,000 | ^ I $35,000 ^ ^ I $30,000 : ^-Stable replacement rate $25,000 ■; ,#• | $20,000 $15,000 & I $10,000 Prosperity $5,000 $0 0 1 2 $ 4 s § ? a Children per woman The poor nations, below $7,500 GDP/person, are those that have the highest birthrates. Using indexpensive energy to improve the economic status of poor nations will lower birthrates, leading to a stable or shrinking world population.

**Extinction**

**Brown 2006** – professor of physiology at West Virginia University (Paul, Notes from a Dying Planet, p. 3-4)

The threats we face stem from overpopulation and environmental degradation. The resulting climate change and mass extinctions are leading to ecological collapse, in which the once-robust tapestry of interrelationships among living creatures, climate, and our physical environment has been weakened and is starting to unravel. Clinical indicators of our planet’s serious illness are illustrated in the graph. I’ve adjusted the vertical scales for population, carbon dioxide (CO2), methane, temperature, and extinction of species per year so they all have a common minimum and maximum.   All the minima occurred tens of thousands of years BC, and all the maxima are now.  The state of the Earth today is unique. We’re consuming the world’s resources faster than they can be restored. The world’s population is now doubling in less than fifty years. Around mid-century the world’s population is expected to level off at eight to twelve billion people. The lower number is far too high: population must start to decline before 2050 if we are to survive. The upper limit, to put it simply, will never be reached because **we would all die first.** Because of population growth and increasing consumption, concentrations of greenhouse gases such as carbon dioxide and methane in our atmosphere are the highest in human history, as are global temperatures. This is not normal climatic fluctuation, as fossil-fuel industry shills would have you believe. The rate of species extinctions is comparable to mass extinctions that have occurred only five times before, and is likely to exceed those. The total decline of species since the Industrial Revolution will soon be worse than the mass extinction caused by the asteroid impact sixty-five million years ago off the Yucatan peninsula, which wiped out 83% of species including the dinosaurs.  Before we came along, species evolved and went extinct for billions of years, creating and filling a diversity of ecological niches. Organisms used energy from the sun to grow and reproduce, recycling the materials needed for life through an interdependent worldwide ecosystem. Mechanisms existed to maintain ecological stability, ensuring that the environment didn’t change too fast for evolution to keep up. Our biosphere recovered from calamitous events like asteroid collisions, even though only a minority of species made it through some of those catastrophes. Today’s ongoing catastrophe may eliminate all but the smallest and simplest of life forms.  Our species has flourished, but without realizing it we’ve changed our environment **too fast for other species to adapt**. A system’s stability can only be eroded so far, after which it becomes unstable. We’re approaching a point where the world’s ecosystem will change too fast even for us to adapt. We will become extinct.  It’s already too late for us to return to the world as we found it or even as it was ten years ago. We’ve wiped out too many species. But we can protect the remaining fragile stability. In a word, we must seek sustainability, which means consuming resources only as fast as they’re replenished. All the trends on our graph have to be reversed, until they’re all back to pre-industrial levels or lower. This doesn’t mean returning to a pre-industrial quality of life – in fact, we should all be able to live much better once there are fewer of us. But we have to take effective action very soon, before it’s too late.

#### 10 in the crunch

Ehrlich, 74 –Professor of Biology at Stanford University-1974 ( Paul June 16th The New York Times)

Furthermore, there are other pernicious fallacies in the “what we as Americans can do about the world population program” game. Let’s start with a fallacy that the authors helped to create-the idea that we might successfully pressure governments of developing countries into launching effective population control programs. In the first edition of our book “The Population Bomb,” it was suggested that the United States try to use its food aid as a lever to get recalcitrant governments moving on population control programs. The logic then ( as today) was impeccable. If you deluded people into thinking that either the U.S could ( or would) supply food in perpetuity for any number of people, you were doing evil. Sooner or later, popualation growth would completely outstrip the capacity of the United States or any other nation to supply food. For every 1,000 people saved today, perhaps 10,000 would die when the crunch came. Simply sending food to hungry nations with population explosions is analogous to a physician prescribing aspirin as a treatment for a patient with operable cancer-in deferring something unpleasant, disaster is entrained. Yes, send some good- but insist that population control measure be instituted. But despite the logic, no one in the U.S. Government paid the slightest heed to that suggestion ( or to related proposals by William and Paul Paddock in their 1968 book, “Famine-1975!”) , and the point is now moot, since we have no more surplus food.

### Science Diplomacy Add-on

**US federal nuclear leadership is key to science diplomacy**

**AAAS ‘8** ((American Association for the Advancement of Science, 10 July 2008, “Energy Expert Calls on United States to Take Leadership in Nuclear Energy Framework”, <http://www.aaas.org/news/releases/2008/0710nuclear_energy.shtml>, [Miller])

**The** next U.S. **president will have a historic opportunity to exercise leadership in** increasing the global investment in **nuclear** technology**, energy expert Victor Reis said** at a AAAS briefing. But the stakes are higher than just finding an alternative to the rising price of oil and coal. Reis, a senior advisor to Secretary of Energy Samuel W. Bodman, said that a well-designed nuclear energy framework could drive global growth by bringing affordable, reliable energy to the developing world, address climate change through clean energy production, and promote international security by securing nuclear materials around the world. **"By increasing the civilian nuclear enterprise, the** next U.S. **president can make use of a historic opportunity to simultaneously attack the biggest interlocking issues that society will face for the next 50 years**," said Reis. Speaking at AAAS headquarters in Washington, D.C., Reis said that around 1.6 billion people, or 25% of the world's population, live without access to electricity and 2.4 billion, or 35%, rely on traditional, carbon-rich biomass like wood for their energy needs because they have no access to modern fuels. Because experts have found a strong correlation between electricity use and almost every statistic for quality of life including life expectancy, literacy, education, and gross domestic product per capita, Reis said, it is imperative that developed nations bring power to the world's neediest citizens. In addition to being an effective technology to meet the future energy needs of the developing world, Reis said that nuclear power generation is better for the environment because it does not release carbon dioxide into the atmosphere. In order to meet a conservative target of maintaining atmospheric carbon dioxide levels below 550 parts per million—a goal echoed in a 2008 report by the Intergovernmental Panel on Climate Change—while still fulfilling the world's energy needs, Reis says that governments must invest heavily in nuclear technology. "A lot of people around the world don't have access to electricity, and you don't want them to burn carbon-rich sources like coal," said Reis, adding that he doesn't see "how you can realistically address climate change without nuclear power." Reis said he is encouraged that many politicians, including those running for president, recognize climate change as among the most pressing issues for their first term in office. Sponsored by the AAAS Center for Science, Technology, and Security Policy, the 2 June briefing on nuclear energy brought together scientists, policy makers, students, and the media. At the event, Benn Tannenbaum, the Center's associate program director, said that he has noticed an increasing amount of opinion and commentary articles on nuclear technology in the nation's largest newspapers, suggesting that it is becoming a heavily discussed issue. "Nuclear energy has tremendous implications for the coming century," said Tannenbaum. "It's absolutely that vital that policy makers make informed decisions with the help of scientists to determine if and how nuclear energy programs move forward. The stakes are incredibly high." Reis said that regardless of U.S. domestic plans to increase nuclear energy production, a widespread global initiative to generate electricity using nuclear power is already underway. Around the world, there are already 439 nuclear reactors in 31 countries, representing 16% of the world's total electricity production. In the United States alone, there are 104 reactors representing 20% of domestic electricity production. Reis added that there are around 93 nuclear power-generating facilities on order or planned globally. He pointed out, however, that there are many challenges to increasing nuclear power around the world, most notably ensuring that radioactive materials used in nuclear power production are not obtained by terrorists or rogue states. One controversial solution announced in 2006 by the administration of U.S. President George W. Bush is the Global Nuclear Energy Partnership (GNEP), an international agreement that has been signed by 21 nations including the United States, the United Kingdom, Russia, China, and France. Under GNEP, the United States and other nations with advanced civilian nuclear energy production facilities would be responsible for safely reprocessing spent nuclear fuel from energy production and then would export it to be reused for other nations' energy programs. This would reduce the number of nuclear enrichment and reprocessing sites around the world, Reis said. He said that the Reliable Replacement Warhead (RRW) program, announced by Bush in 2004, would also help to significantly reduce the overall number of weapons in the U.S. nuclear arsenal while modernizing their design. Weapons experts believe that this may encourage other nations including Russia to reduce their stockpiles. While some experts like former Secretaries of State George P. Shultz and Henry A. Kissinger suggest that nations should aim to achieve a nuclear weapons-free world, others such as former Secretary of Defense Harold Brown and former Director of Central Intelligence John Deutch believe that it is an unreasonable goal and poor policy. Beyond the proliferation of enriched nuclear material, many critics of nuclear power production in the United States fear the increased amount of toxic materials that need to be transported from the reactors to storage after they are used. Reis said he understood those concerns but pointed to the 100 million miles of safe travel that the Department of Energy has overseen for the nation's nuclear weapons and energy materials. He said the same procedures can be applied to commercial nuclear energy. In addition, many nuclear power critics fear the consequences of reactor accidents like the 1986 Chernobyl accident in the Soviet Union and the 1979 Three Mile Island accident near Harrisburg, Pennsylvania. Reis once again pointed out the globe's "remarkable" safety record during more than 12,000 reactor-years of operation with significant improvements made to world's nuclear infrastructure following the incidents. The Three Mile Island incident caused no documented injuries and led to important improvements in U.S. and global safety operations, he said. He added that the Chernobyl disaster involved a reactor that was poorly designed and did not have sufficient containment, which lead to a new generation of reactors with higher safety specifications. Another significant issue with nuclear energy production is where to store the radioactive materials. One controversial proposal is to transport all waste to the Yucca Mountain Repository, a geological storage facility1000 feet deep in the Nevada desert. While the plan has its advantages, such as the ability to retrieve the materials after they are deposited, Reis said that many find the program "geographically unfair" because it makes one region assume the entire burden of the nation's nuclear waste. Regardless of the decision to increase nuclear energy production over the coming decades, Reis said that the Department of Energy (DOE) is able and ready to meet the new challenges of the 21st Century. With over 12,440 Ph.D. scientists, 25,000 visiting scientists, and 17 laboratories across the country, Reis said that **the DOE laboratories "represent one of the biggest scientific collections in the world [and] maybe in the history of civilization."** Beyond access to some of the **top scientific minds and computers** in the world, Reis highlighted several major DOE achievements including **maintaining six top research facilities**, certifying the U.S. nuclear weapons arsenal without underground testing, **helping other nations** secure their nuclear materials, and cleaning up the Rocky Flats weapons production facility and helping convert it into a wildlife refuge. In addition, Reis said that the DOE has nine years of successful operation of its Waste Isolation Pilot Plant (WIPP). Located in Carlsbad, New Mexico, the facility is an underground radioactive waste repository serving as a frontrunner for the Yucca Mountain site. "**Because of the implications of nuclear energy, good or bad, it is important that the** next **administration seize the opportunity for global leadership by using the Department of Energy's world leading assets**," Reis said. Reis added that **the nuclear enterprise could become a vehicle for international cooperation**, echoing a December 1953 speech by U.S. President Dwight D. Eisenhower in which he pledged to devote the nation's "entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life."

**Science diplomacy accesses every impact**

**Fedoroff ‘8** (Nina, Science and Technology Advisor to the Secretary of State, “Making Science Diplomacy more Effective”, Testimony before the House Science Subcommittee on Research and Science Education, 4-2, <http://legislative.nasa.gov/hearings/4-2-08%20Fedoroff.pdf>)

**Science by its nature facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities** for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all. Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and **cultural understanding**. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans-national and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board`s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science - particularly those that address the grand challenges in science and technology - are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world - Japan, Korea, China, E.U., India, Russia, and United States - representing 70% of the world`s current population. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world`s two nuclear powers - the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount. Using Science Diplomacy to Achieve National Security Objectives The welfare and stability of countries and regions in many parts of the globe require[s] a concerted effort by the developed world to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them **climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism**. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, **becoming regional or global threats**. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges **facing humankind** are enormous. Addressing these common challenges demands common solutions and necessitates **scientific cooperation**, common standards, and common goals. We must increasingly harness the power of American ingenuity in science and technology through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S. interests in foreign policy. There are also important challenges to the ability of states to supply their populations with sufficient food. The still-growing human population, rising affluence in emerging economies, and other factors have combined to create unprecedented pressures on global prices of staples such as edible oils and grains. Encouraging and promoting the use of contemporary molecular techniques in crop improvement is an essential goal for US science diplomacy. An essential part of the war on terrorism is a war of ideas. The creation of economic opportunity can do much more to combat the rise of fanaticism than can any weapon. The war of ideas is a war about rationalism as opposed to irrationalism. Science and technology put us firmly on the side of rationalism by providing ideas and opportunities that improve people`s lives. We may use the recognition and the goodwill that science still generates for the United States to achieve our diplomatic and developmental goals. Additionally, the Department continues to use science as a means to reduce the proliferation of the weapons` of mass destruction and prevent what has been dubbed `brain drain`. Through cooperative threat reduction activities, former weapons scientists redirect their skills to participate in peaceful, collaborative international research in a large variety of scientific fields. In addition, new global efforts focus on improving **biological**, chemical, and **nuclear security** by promoting and implementing **best scientific practices as a means to enhance security, increase global partnerships, and create sustainability.**

### Terror Add-on

#### spent nuclear fuel is exposed in the status quo – fast reactors solve

**Nuclear Threat Initiative 12** [Nuclear Threat Initiative, 8-1-2012, "Why Is Highly Enriched Uranium a Threat?" Prepared by the James Martin Center for Nonproliferation Studies at the Monterey Institute of International Studies]

The most difficult challenge for a terrorist organization seeking to build a nuclear weapon or improvised nuclear device is obtaining fissile material, either plutonium or highly enriched uranium (HEU). HEU, uranium that has been processed to increase the proportion of the U-235 isotope to over 20%, is required for the construction of a gun-type nuclear device, the simplest type of nuclear weapon. The greater the proportion of U-235 (i.e. the higher the enrichment level), the less material is needed for a nuclear explosive device. Weapons-grade uranium generally refers to uranium enriched to at least 90%, but material of far lower enrichment levels, found in both fresh and spent nuclear fuel, can be used to create a nuclear explosive device.¶ In 2002, the U.S. National Research Council warned that "crude HEU weapons could be fabricated without state assistance," noting that "the primary impediment that prevents countries or technically competent terrorist groups from developing nuclear weapons is the availability of [nuclear material], especially HEU."[1] Creating a nuclear weapon from HEU is technically easier than building a plutonium weapon. Moreover, current technology is unlikely to detect a shielded nuclear device on a truck or boat. Therefore, securing and eliminating stocks of HEU is the surest way to decrease the risk that terrorist groups could use this material to create a nuclear explosion.¶ Where Is Civilian HEU Located?¶ Experts estimate that approximately 70 tons of HEU are used in civilian applications worldwide. [2] As little as 25 kilograms (kg) of U-235 (which amounts to about 28kg of HEU enriched to 90%) is needed to produce a nuclear weapon; about 40-60kg is needed for a cruder nuclear device. [3] Bomb-grade material can be obtained from HEU that is fresh (unirradiated), and irradiated (also referred to as spent). Fresh and lightly irradiated fuel (such as fuel used in critical assemblies and pulse reactors) is not significantly radioactive, and is therefore relatively safe to handle. Although using nuclear fuel in high-powered reactors initially makes it highly radioactive and thus very difficult to handle safely (often this fuel is referred to as "self-protecting"), spent fuel loses its radioactivity over time, making it easier to handle and potentially more attractive to terrorists.¶ HEU is currently used in the civilian sphere to fuel research reactors, critical assemblies, pulsed reactors, and a few fast reactors. According to the International Atomic Energy Agency (IAEA), 244 research reactors are in operation or temporarily shut down across 56 countries. A further 441 reactors have been shut down or decommissioned, while eight are planned or under construction. [4]

#### That’s key to the nuclear taboo – solves nuclear war

Bin ‘9(5-22-09 About the Authors Prof. Li Bin is a leading Chinese expert on arms control and is currently the director of Arms Control Program at the Institute of International Studies, Tsinghua University. He received his Bachelor and Master Degrees in Physics from Peking University before joining China Academy of Engineering Physics (CAEP) to pursue a doctorate in the technical aspects of arms control. He served as a part-time assistant on arms control for the Committee of Science, Technology and Industry for National Defense (COSTIND).Upon graduation Dr. Li entered the Institute of Applied Physics and Computational Mathematics (IAPCM) as a research fellow and joined the COSTIND technical group supporting Chinese negotiation team on Comprehensive Test Ban Treaty (CTBT). He attended the final round of CTBT negotiations as a technical advisor to the Chinese negotiating team. Nie Hongyi is an officer in the People’s Liberation Army with an MA from China’s National Defense University and a Ph.D. in International Studies from Tsinghua University, which he completed in 2009 under Prof. Li Bin. )

The nuclear taboo is a kind of international norm and this type of norm is supported by the promotion of the norm through international social exchange. But at present the increased **threat of nuclear terrorism has lowered people’s confidence that nuclear weapons will not be used**. China and the United States have a broad common interest in combating nuclear terrorism. **Using technical and institutional measures to break the foundation of nuclear terrorism and lessen the possibility of a nuclear terrorist attack can** not only weaken the danger of nuclear terrorism itself but also **strengthen people’s confidence in the nuclear taboo**, and in this way preserve an international environment beneficial to both China and the United States. In this way **even if there is crisis** in China-U.S. relations caused by conflict, **the nuclear taboo can** also help both countries **reduce suspicions** about the nuclear weapons problem, **avoid miscalculation and thereby reduce the danger of a nuclear war.**

### Elections

#### Romney will win –

#### Polling and independent voters

**Cohen, 10/25**/12 (Jon, “Post-ABC tracking poll: Romney 50 percent, Obama 47” Washington Post,

<http://www.washingtonpost.com/blogs/the-fix/wp/2012/10/25/post-abc-tracking-poll-romney-50-percent-obama-47/>

¶ Republican Mitt Romney has edged ahead of President Obama in the new Washington Post-ABC News national tracking poll, with the challenger winning 50 percent of likely voters for the first time in the campaign.¶ As Romney hits 50, the president stands at 47 percent, his lowest tally in Post-ABC polling since before the national party conventions. A three-point edge gives Romney his first apparent advantage in the national popular vote, but it is not one that is statistically significant with a conventional level of 95 percent confidence.¶ Results from the tracking poll were first released Monday evening, and had Obama at 49 percent, and Romney at 48. On Tuesday and Wednesday, the results were flipped, with Romney at 49 and the president at 48. All of the results are among likely voters.¶ However, Romney does now boast a statistically — and substantively — important lead on the economy, which has long been the central issue of the race. When it comes to handling the nation’s struggling economy, 52 percent of likely voters say they trust Romney more, while 43 percent say they have more faith in the president.¶ And just as the challenger has leaped ahead on this score, he has effectively neutralized what has been a consistent fall-back for Obama: economic empathy. In the new poll, 48 percent say Obama is more in tune with the economic problems people are having, and nearly as many, 46 percent, say Romney is the one who is more in touch. Just two weeks ago, Obama had a nine-point lead on the question.¶ The two candidates also run about evenly on the question of handling “international affairs,” little difference from where they were heading into Monday’s debate on foreign policy.¶ Romney’s improvements on the economy — and on empathizing with the plight of those struggling financially — has been fueled by gains among political independents. Independents now side with Romney by campaign highs on both the economy (61 to 34 percent) and on understanding people’s problems (52 to 42 percent).¶ These advantages with independents undergird a sizable, 19 percentage-point Romney lead over Obama on the horse race. Should that advantage stick, it would be the sharpest tilt among independents in a presidential election since Ronald Reagan’s 1984 landslide win. (Reagan won independent and other unaffiliated voters 63 to 36 percent, according to the exit poll). Obama won them by eight in 2008.

#### Huge laundy list of nuclear incentives and construction now

**Johnson ’12** (US Campaign Trail: is nuclear in the equation? By John Johnson on Apr 25, 2012, nuclear energy expert and analyst, Nuclear Energy Insider, Nuclear Business Intelligence <http://analysis.nuclearenergyinsider.com/new-build/us-campaign-trail-nuclear-equation>

Just the same, the Obama Administration is considered a nuclear supporter, having made several moves to help jumpstart America’s nuclear energy industry. Obama plugged nuclear power during his first State Of The Union speech several years ago, and has generally been upbeat about the energy source’s future in the U.S. The Campaign Obama, a Democrat, will face Mitt Romney in the November election. Romney is expected to be named the official Republican nominee in August. While Romney has not taken a stance on nuclear energy during his campaign, the Obama administration has made significant investments in the sector, including a $450m budget request in March intended to advance the development of American-made small modular reactors (SMRs). Congress still needs to approve the authorization for funding. The SMRs are expected to be ready for commercial use within 10 years, and are intended for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes. “The Obama Administration and the Energy Department are committed to an all-of-the-above energy strategy that develops every source of American energy, including nuclear power, and strengthens our competitive edge in the global clean energy race,” U.S. Energy Secretary Steven Chu said when the program was announced. “Through the funding for small modular nuclear reactors, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.” John Keeley, manager of media relations for the Nuclear Energy Institute, said that the Obama administration has done what it can to support the deployment on new build-outs in the United States to build out nuclear, as well as supporting research and development efforts, such as those in the small reactor space. Research support In addition, the U.S. has invested $170 million in research grants at more than 70 universities, supporting research and development into a full spectrum of technologies, from advanced reactor concepts to enhanced safety design. “The President was explicit in his State Of The Union speech about the virtues of nuclear as a technology and its role in clean air generation,” said Keeley. “And he has been supportive of developing more nuclear plants in this country. Those initiatives have to be identified as significant evidence of support for the nuclear sector.” There are currently 104 nuclear power reactors operating in the U.S. in 31 states, operated by 30 different utilities. There are four new nuclear reactors being built in the U.S., including two in George at total expected cost of $14bn. In another sign of the U.S support for the industry, the federal government provided utility company Southern with an $8.3bn loan guarantee for the Vogtle Units 3 and 4, the first new nuclear plants to be built in the U.S. in the last 30 years. They are expected to be operational in 2016 and 2017. The U.S. Energy Department has also supported the Vogtle project and the development of the next generation of nuclear reactors by providing more than $200m through a cost-share agreement to support the licensing reviews for the Westinghouse AP1000 reactor design certification. In addition to the Vogtle plants, SCANA, a subsidiary of South Carolina Electric & Gas Co. plans to add two reactors to its nuclear power plant near Jenkinsville, S.C., by 2016 and 2019.

#### Frankenstorm thumps – crushes Democratic turnout

**Walsh, 10/26/12** (Paul, “Will 'Frankenstorm' Impact the 2012 Presidential Election?” http://www.cnbc.com/id/49569527)

As we enter the final days of the 2012 race, with each campaign raising and spending an unprecedented amount of money, the final call on who wins or loses may come down to something as simple as the weather on Election Day.¶ It turns out that when it comes to turnout, the weather is important. Really important.¶ The Weather Channel has partnered with Ipsos to get a read on how the weather would influence voter turnout.¶ And here’s the headline: 35% of undecided voters say bad weather will impact their decision to head to the polls.¶ The risk from Hurricane Sandy is indirectly related to the actual storm; rather it’s a function of four things, most of them bad for President Obama and Governor Romney:¶ Momentum loss due to the media distraction during the lead-up to the storm¶ Recovery efforts in key states like Virginia, Pennsylvania, Ohio and New Hampshire¶ Voter turn-out issues from areas experiencing wide-spread power outages. This could include large portions of Virginia, Pennsylvania and New Hampshire.¶ Controversy following a close election related to voter turnout affected by the storm¶ Here are some other key findings from The Weather Channel/Ipsos:¶ Already-decided voters are more certain they’ll vote, regardless of the weather. Among those who plan to vote and know which candidate they’ll vote for, 19 percent say bad weather will impact whether they make it to the polls, as compared to 35 percent of undecided voters¶ In bad weather, Mitt Romney’s supporters are more likely to vote. Among registered voters, 28 percent who support President Barack Obama are likely to say that bad weather would have a “significant or moderate impact” on their getting to the polls versus 19 percent of Gov. Romney’s supporters

#### Nuclear power doesn’t swing the election -- identical positions mean it won’t get drawn into the debate.

**Wood, 9-13-12**

[Elisa, AOL, “What Obama and Romney Don't Say About Energy,” http://energy.aol.com/2012/09/13/what-obama-and-romney-dont-say-about-energy/]

Fossil fuels and renewable energy have become touchy topics in this election, with challenger Mitt Romney painting President Barack Obama as too hard on the first and too fanciful about the second – and Obama saying Romney is out of touch with energy's future. But two other significant resources, nuclear power and energy efficiency, are evoking scant debate. What gives? Nuclear energy supplies about 20 percent of US electricity, and just 18 months ago dominated the news because of Japan's Fukushima Daiichi disaster – yet neither candidate has said much about it so far on the campaign trail. Romney mentioned nuclear power only seven times in his recently released white paper, while he brought up oil 150 times. Even wind power did better with 10 mentions. He pushes for less regulatory obstruction of new nuclear plants, but says the same about other forms of energy. Obama's campaign website highlights the grants made by his administration to 70 universities for research into nuclear reactor design and safety. But while it is easy to find his ideas on wind, solar, coal, natural gas and oil, it takes a few more clicks to get to nuclear energy. The Nuclear Energy Institute declined to discuss the candidates' positions pre-election. However, NEI's summer newsletter said that both "Obama and Romney support the use of nuclear energy and the development of new reactors."

#### Plan happens after the election

Ramsey Cox (writer for The Hill) September 24, 2012 “Congress to hold pro forma sessions until November” http://thehill.com/blogs/floor-action/senate/251313-congress-to-hold-pro-forma-sessions-until-november

Rather than being in recess for more than five weeks, both the Senate and the House decided to hold pro forma sessions until after the November elections. Both chambers will gavel in Tuesday morning for a brief session; typically, legislative business doesn't take place in pro forma sessions. At most members ask to be recognized for a speech, but rarely do. It is unclear if the legislative branch was afraid of recess appointments by the White House, yet both sides took a formal recess in August. The Senate will hold a pro forma session every Tuesday and Friday until Nov. 13 at 2 p.m. when they’ll continue work on S. 3525, the Sportsmen Act, which would increase access to federal land for hunters and fishers while also supporting conservation measures.

**Nuclear power popular**

Brown ’12 (Dave Brown — Exclusive to Uranium Investing News, “United States Still Favors Nuclear Power”, <http://uraniuminvestingnews.com/11008/united-states-still-favors-nuclear-power.html>, March 28, 2012, LEQ)

According to the results of Gallup’s annual Environment survey, conducted earlier this month, the majority of Americans continue to favor nuclear energy as a source of electricity for the United States. The survey indicated that 57 percent of participants were in favor of nuclear power this year, the same amount as in 1994, the first year for the survey. This year’s results also demonstrate an equal level of support among participants as last year, just prior to the Japanese earthquake and tsunami. Support for the nuclear industry as measured by the survey has ranged from a low of 46 percent in 2001 to a high of 62 percent in 2010. These results are of significance to investors as the US is the largest consumer of uranium in the world, with 104 operational nuclear reactors. Continued public support and confidence from the country should guide future political decisions and foster economic interest in domestic and international uranium resources as well as in nuclear industry stakeholders.

#### Romney will rig the election

**Barrett 10/21** – Ph.D. Arabist-Islamologist, political analyst for PressTV

(Kevin, “Election fraud storm-clouds loom over US presidential race”, <http://www.presstv.ir/detail/2012/10/21/267897/romney-fraud-looms-in-us-election/>, dml)

Despite the thunderous silence of the media, all signs are pointing towards another neocon-Republican election theft attempt, like the successful ones of 2000 and 2004. ¶ One warning sign: The appearance of blatantly fraudulent public opinion polls giving Romney a substantial lead over Obama. While all other polls show that Obama has enough of an edge in the swing states to constitute an electoral-college “firewall,” Gallup’s national polls -- using a “likely voter” model that apparently posits an inverse correlation between voting and skin pigmentation -- currently give Romney an edge of more than five points in the popular vote. ¶ Why would the Republicans falsify a prominent national poll? To give Romney “momentum,” and create the illusion of plausibility when rigged voting machines hand him a “surprise victory.” ¶ But why just one poll? Because it’s doable. Rigging ALL the polls is a herculean task, even for a party backed by the world’s biggest crime syndicate. ¶ Is there any evidence that Romney will try to steal the swing states he needs to capture the White House? Unfortunately, yes.¶ Believe it or not, Romney actually OWNS the black-box voting machines that will fabricate -- not count -- the votes in Ohio, the most important swing state. (“Black box” machines are designed with no transparent link between the votes that go in, and the “results” that come out.)¶ As my recent radio guest Bob Fitrakis and two co-authors explain in their article Does the Romney Family Now Own Your e-Vote? ¶ Will you cast your vote this fall on a faulty electronic machine that’s partly owned by the Romney Family? Will that machine decide whether Romney will then inherit the White House? ¶ Through a closely held equity fund called Solamere, Mitt Romney and his wife, son and brother are major investors in an investment firm called H.I.G. Capital. H.I.G. in turn holds a majority share and three out of five board members in Hart Intercivic, a company that owns the notoriously faulty electronic voting machines that will count the ballots in swing state Ohio November 7. Hart machines will also be used elsewhere in the United States. ¶ In other words, a candidate for the presidency of the United States, and his brother, wife and son, have a straight-line financial interest in the voting machines that could decide this fall’s election. These machines cannot be monitored by the public. But they will help decide who “owns” the White House. ¶ They are especially crucial in Ohio, without which no Republican candidate has ever won the White House. In 2004, in the dead of election night, an electronic swing of more than 300,000 votes switched Ohio from the John Kerry column to George W. Bush, giving him a second term. A virtual statistical impossibility, the 6-plus% shift occurred between 12:20 and 2am election night as votes were being tallied by a GOP-controlled information technology firm on servers in a basement in Chattanooga, Tennessee… (Read the complete article here.)

#### Too late to change the election- ideology

Helling ’12 (DAVE HELLING, McClatchy Newspapers Miami Herald 7-22-12 "Is the race for president already over?"

But **a growing number** of **political scientists and campaign consultants** - backed by the **latest polling data** - think the daily campaign back-and-forth **is having no significant effect on voters.** Most Americans have **locked in** their presidential decisions, polls released Thursday suggested, and the already small number of persuadable voters **shrinks by the hour**. Put another way: America could vote for president next week, and the outcome would probably be the same as it will be in November. "That's accurate, barring some really big, big event or change in the political environment," said Alan Abramowitz, a political science professor at Emory University in Atlanta, who has studied presidential voting patterns. Kenneth Warren, a political science professor at St. Louis University, agreed. "Most people have decided who they're going to vote for early on," he said. Recent polls show those who have decided are split almost evenly between Obama and Romney. In a CBS/New York Times poll, Romney led by 1 point. In a Fox News poll, he trailed Obama by 4 points. A National Public Radio poll found Obama leading by 2 points. A Gallup tracking poll over the same time period showed the race dead even. The average of polls puts the Obama advantage at 1.2 percent, according to Real Clear Politics, a political aggregation website. The incumbent has led Romney in that average by a one- to two-point margin since last October. Political scientists and consultants said there were several reasons for early presidential decision-making. In an Internet-cable-TV age, **voters are pounded with political messages daily, helping them make up their minds far in advance** of the election. An incumbent in the race makes at least one of the candidates a known quantity. And American **voters are deeply divided, further cementing their choices.**

#### Winners win elections- the plan is key to Obama’s momentum

Creamer, 11 – political strategist for over four decades

(Robert, he and his firm, Democracy Partners, work with many of the country’s most significant issue campaigns, one of the major architects and organizers of the successful campaign to defeat the privatization of Social Security, he has been a consultant to the campaigns to end the war in Iraq, pass health care, pass Wall Street reform, he has also worked on hundreds of electoral campaigns at the local, state and national level, "Why GOP Collapse on the Payroll Tax Could be a Turning Point Moment," Huffington Post, 12-23-11, www.huffingtonpost.com/robert-creamer/why-gop-collapse-on-the-p\_b\_1167491.html, accessed 9-1-12, mss)

2). Strength and victory are **enormous political assets.** Going into the New Year, they now belong to the President and the Democrats. One of the reasons why the debt ceiling battle inflicted political damage on President Obama is that it made him appear ineffectual - a powerful figure who had been ensnared and held hostage by the Lilliputian pettiness of hundreds of swarming Tea Party ideological zealots. In the last few months -- as he campaigned for the American Jobs Act -- he has shaken free of those bonds. Now voters have just watched James Bond or Indiana Jones escape and turn the tables on his adversary. Great stories are about a protagonist who meets and overcomes a challenge and is victorious. The capitulation of the House Tea Party Republicans is so important because it feels like the beginning of that kind of heroic narrative. Even today most Americans believe that George Bush and the big Wall Street Banks - not by President Obama -- caused the economic crisis. Swing voters have never lost their fondness for the President and don't doubt his sincerity. But they had begun to doubt his effectiveness. They have had increasing doubts that Obama was up to the challenge of leading them back to economic prosperity. The narrative set in motion by the events of the last several weeks could be a turning point in voter perception. It could well begin to convince skeptical voters that Obama is precisely the kind of leader they thought he was back in 2008 - a guy with the ability to lead them out of adversity - a leader with the strength, patience, skill, will and resoluteness to lead them to victory. That now contrasts with the sheer political incompetence of the House Republican Leadership that allowed themselves to be cornered and now find themselves in political disarray. And it certainly contrasts with the political circus we have been watching in the Republican Presidential primary campaign. 3). This victory will inspire the dispirited Democratic base. Inspiration is the feeling of empowerment - the feeling that you are part of something larger than yourself and can personally play a significant role in achieving that goal. It comes from feeling that together you can overcome challenges and win. Nothing will do more to inspire committed Democrats than the sight of their leader -- President Obama - out maneuvering the House Republicans and forcing them into complete capitulation. The events of the last several weeks will send a jolt of electricity through the Progressive community. The right is counting on Progressives to be demoralized and dispirited in the coming election. The President's victory on the payroll tax and unemployment will make it ever more likely that they will be wrong. 4). When you have them on the run, that's the time to chase them. The most important thing about the outcome of the battle over the payroll tax and unemployment is that it shifts the political momentum at a critical time. Momentum is an independent variable in any competitive activity - including politics. In a football or basketball game you can feel the momentum shift. The tide of battle is all about momentum. The same is true in politics. And in politics it is even more important because the "spectators" are also the players - the voters. **People** follow - and **vote -- for winners**. The bandwagon effect is enormously important in political decision-making. Human beings like to travel in packs. They like to be at the center of the mainstream. Momentum shifts affect their perceptions of the mainstream. For the last two years, the right wing has been on the offensive. Its Tea Party shock troops took the battle to Democratic Members of Congress. In the Mid-Terms Democrats were routed in district after district. Now the tide has turned. And when the tide turns -when you have them on the run - that's the time to chase them.

#### Energy won’t switch votes

**Farnam, 12** (T.W. Washington Post, Energy ads flood TV in swing states, 6/27, <http://www.washingtonpost.com/politics/energy-ads/2012/06/27/gJQAD5MR7V_story.html>)

Energy issues don’t spark much excitement among voters, ranking below health care, education and the federal budget deficit — not to mention jobs and the economy.

And yet those same voters are being flooded this year with campaign ads on energy policy. Particularly in presidential swing states, the airwaves are laden with messages boosting oil drilling and natural gas and hammering President Obama for his support of green energy. The Cleveland area alone has heard $2.7 million in energy-related ads.

The disconnect between what voters say they care about and what they’re seeing on TV lies in the money behind the ads, much of it coming from oil and gas interests. Those funders get the double benefit of attacking Obama at the same time they are promoting their industry.

Democrats also have spent millions on the subject, defending the president’s record and tying Republican candidate Mitt Romney to “Big Oil.”

Overall, more than $41 million, about one in four of the dollars spent on broadcast advertising in the presidential campaign, has gone to ads mentioning energy, more than a host of other subjects and just as much as health care, according to ad-tracking firm Kantar Media/Cmag.

In an election focused heavily on jobs and the economy, all of this attention to energy seems a bit off topic. But the stakes are high for energy producers and environmentalists, who are squared off over how much the government should regulate the industry. And attention has been heightened by a recent boom in production using new technologies such as fracking and horizontal drilling, as well as a spike in gas prices this spring just as the general election got underway.

When asked whether energy is important, more than half of voters say yes, according to recent polls. But asked to rank their top issues, fewer than 1 percent mention energy.

#### No impact – Romney will copy Obama on foreign policy

Aaron David Miller, 5-23-2012; distinguished scholar at the Woodrow Wilson International Center for Scholars; Barack O'Romney http://www.foreignpolicy.com/articles/2012/05/23/barack\_oromney

And that brings up an extraordinary fact. What has emerged in the second decade after 9/11 is a remarkable consensus among Democrats and Republicans on a core approach to the nation's foreign policy. It's certainly not a perfect alignment. But rarely since the end of the Cold War has there been this level of consensus. Indeed, while Americans may be divided, polarized and dysfunctional about issues closer to home, we are really quite united in how we see the world and what we should do about it. Ever wondered why foreign policy hasn't figured all that prominently in the 2012 election campaign? Sure, the country is focused on the economy and domestic priorities. And yes, Obama has so far avoided the kind of foreign-policy disasters that would give the Republicans easy free shots. But there's more to it than that: Romney has had a hard time identifying Obama's foreign-policy vulnerabilities because there's just not that much difference between the two. A post 9/11 consensus is emerging that has bridged the ideological divide of the Bush 43 years. And it's going to be pretty durable. Paradoxically, both George W. Bush's successes and failures helped to create this new consensus. His tough and largely successful approach to counterterrorism -- specifically, keeping the homeland safe and keeping al Qaeda and its affiliates at bay through use of special forces, drone attacks, aggressive use of intelligence, and more effective cooperation among agencies now forms a virtually unassailable bipartisan consensus. As shown through his stepped-up drone campaign, Barack Obama has become George W. Bush on steroids. And Bush 43's failed policies -- a discretionary war in Iraq and a mismanaged one in Afghanistan -- have had an equally profound effect. These adventures created a counter-reaction against ill-advised military campaigns that is now bipartisan theology as well. To be sure, there are some differences between Romney and Obama. But with the exception of Republicans taking a softer line on Israel and a tougher one on Russia -- both stances that are unlikely to matter much in terms of actual policy implementation -- there's a much greater convergence.

#### Never gonna give him up, never gonna let him down

Neil Munro 8-30-2011; Daily Caller “Obama still has green energy vote for 2012” <http://dailycaller.com/2011/08/30/obama-still-has-green-energy-vote-for-2012/>

Environmentalists are staging a two-week oil-pipeline protest outside the White House to boost their importance to President Barack Obama’s political calculations in the 2012 election season. But there’s little evidence so far that progressives’ disappointment with Obama’s environmental policies threatens to reduce their turnout on election day, or that it pressures White House officials to make additional concessions to environmentalists during a political season dominated by the public’s demand for additional jobs. Monday’s colorful, TV-ready protests against the Keystone XL pipeline from Canada’s oil fields to U.S consumers took place in Lafayette Park, in front of the White House. The day’s events included 100 peaceful arrests of environmentalists and celebrities, a multi-faith spiritual event in Lafayette Park, press club speeches by environmental leaders, and numerous suggestions that approval of the pipeline by Obama will cost his campaign votes, volunteers and donations. Hundreds of others have already been arrested, and numerous environmental groups have contributed to two weeks of protest. If Obama approves the pipeline, environmental activist Andrew Driscoll predicted he would not vote to re-elect him. “He hasn’t done anything to earn our vote yet,” said the Massachusetts activist. “The fate of humanity, the fate of the planet” will be determined by Obama’s pipeline decision, he said. “If he approves it, it will be a huge blow, not only for our future, but also for this administration,” said Elijah Zarlin, a campaign manager at CREDO Action, an Atlanta-based progressive group. The protesters “are the people who are maybe going to vote for Obama, and are the people Barack will lose” if he approves the pipeline, he added. However, the leadership of the green movement isn’t threatening to break with Obama over this one decision. (RELATED: Gore: Global warming skeptics are this generation’s racists)

#### Romney not crazy on Russia

The Economist 9/1 (9/1/12, Romney Could Screw Up US Relations With Russia, <http://www.businessinsider.com/mitt-romneys-foreign-policy-chops-come-into-light-2012-9>, RBatra)

At the same time, the potential impact of a Romney presidency should not be exaggerated. Mr Romney is not an ideological politician, and he will have solid reasons to maintain a working relationship with Russia. These include reliance on Russian transit corridors to support US forces in Afghanistan to 2015 and beyond, Russia's veto in the UN Security Council, and its potential to act as interlocutor between the US and rogue states. Finally, there is a significant element of uncertainty that stems from the lack of clarity about what Mr Romney, who has often changed his position, actually stands for. In particular, the extent of the influence on him of several competing Republican foreign policy schools (neo-conservativism, populist isolationism, realism, liberal internationalism) is unclear.

#### Putin a/c

**Weiss 6-19** – Founder and Chief Executive Officer of Weiss Asset Management, a Boston-based investment firm,[[2]](http://en.wikipedia.org/wiki/Andrew_Weiss_%28economist%29#cite_note-time-1) and Professor Emeritus [Boston University](http://en.wikipedia.org/wiki/Boston_University) (Andrew, 2012, “[Putin's Waiting Game](http://www.foreignpolicy.com/articles/2012/06/19/waiting_game)” <http://www.foreignpolicy.com/articles/2012/06/19/waiting_game?page=full>) Jacome

The most important yet overlooked aspect of the current situation, however, may be the cynicism and casual indifference that Putin has displayed toward the U.S.-Russian relationship in the face of his much bigger problems at home. At the moment, Putin appears to be preoccupied by the political mess created by his decision to [switch jobs with Medvedev](http://www.nytimes.com/2012/05/09/world/europe/slight-hiccup-as-putin-and-medvedev-switch-jobs-in-russia.html) and the [badly flawed Duma elections](http://www.bbc.co.uk/news/world-europe-16042797) last December. He also must contend with the ripple effects of the eurozone drama and global economic slowdown, which together have contributed to a [20 percent decline](http://online.wsj.com/article/SB10001424052702303734204577467893480636270.html?mod=ITP_moneyandinvesting_3) in global oil prices over the past two months alone.

Against this backdrop, the ups and downs of relations with Washington may be little more than a distraction from the more urgent challenge of restoring the aura of invulnerability and bezal'ternativnost' (the lack of any alternative) that bolstered Putin's authority during his first 12 years in power. Already, he seems to have fallen back on the tried-and-true formula of portraying himself as the protector of a Fortress Russia beset by imaginary foreign enemies and spies.  This gambit has long helped the Kremlin cultivate support from average citizens and build up the regime's legitimacy.

The chief beneficiaries of Putin's rule -- the increasingly affluent and middle-class residents of places like Moscow -- show no signs of muffling their anger about his return to the Kremlin despite an ongoing crackdown on political dissent. Still, Putin knows how to cater to the two-thirds of the Russian electorate that voted for him in March and reside primarily in Russia's smaller cities and countryside. He may find it hard to resist the temptation to play upon their worst fears and anti-Western stereotypes. **Sacrificing the past several years of dramatic improvement in the U.S.-Russian relationship may seem like a small price to pay if it breathes new life and legitimacy into his rule.**

**Relations are impossible and won’t result in cooperation**

**LaFranchi, 3/3/12** [Christian Science Monitor, “A cold-war chill US-Russia relations falter over Libya and Syria”, http://www.csmonitor.com/USA/Foreign-Policy/2012/0303/A-cold-war-chill-US-Russia-relations-falter-over-Libya-and-Syria/%28page%29/2]

Secretary of State Hillary Rodham Clinton doffed her diplomatic gloves after Russia vetoed a United Nations Security Council resolution on Syria. Calling the February veto "despicable," she laid at Moscow's feet the "murders" of Syrian "women, children, [and] brave young men."

Not to be outdone, Russian Prime Minister Vladimir Putin railed against the United States for indulging its "bellicose itch" to get involved in other countries' internal affairs. And he vowed that Russia will thwart American designs in the Middle East.

Whatever happened to the "reset," President Obama's ballyhooed reorientation of US-Russia relations to a more cooperative path focused on common interests?

Russia would say Libya happened – the conflict where the West and the US in particular demonstrated a zeal for intervention that struck at Russia's sense of sovereignty and of what the UN should and shouldn't do. The US would say Syria happened – revealing Russia's revived obstructionist tendencies on the Security Council and demonstrating Russia's determination to protect an old ally at the expense of the Syrian people.

Both countries might say that what happened is this: The common interests that the "reset" was meant to emphasize – arms control, counterterrorism, the global economy – have taken a back seat to awakened geopolitical rivalries and diverging international visions.

Add to this the fact that Mr. Putin is expected to return to Russia's presidency in elections Sunday, bringing with him a blame-the-west perspective for explaining many of Russia's ills.

The result is that stormy days lie ahead for US-Russia relations, many say. Progress on issues like missile defense and NATO-Russia relations is likely to remain stalled – and could suffer serious setbacks if the Syria and Iran crises deteriorate further.

"I foresee a tough year for US-Russia relations," says Andrew Weiss, a former director for Russian affairs on the National Security Council under President Clinton who is now a Russia analyst at the RAND Corp. in Arlington, Va. With little prospect for advances, he adds, the Obama administration is likely to focus on preventing backsliding. "The emphasis will be on ensuring that these fast-moving conflicts don't put the remaining areas of cooperation at risk," he says.

Others say the current frictions demonstrate how relations, despite the efforts of three administrations, have never overcome cold-war mistrusts to progress to a deeper level.

"Under both Clinton and Bush, the US made it look like things were moving forward with Russia by focusing on things that were easier to do and that didn't require sacrifice from either side," says Paul Saunders, executive director of the Center for the National Interest in Washington.

Three years ago this month, President Obama said he **hoped to promote** more **cooperation** between the U.S. and Russia. It would be hard to see how that may happen as Vladimir Putin approaches power once again. Host Scott Simon speaks with the U.S. ambassador to Russia, Michael McFaul, about Sunday's elections in Russia.

#### Romney is a pragmatist – no risk of neocon-driven wars

Peter Foster 7-25-2012; Peter Foster is the Telegraph's US Editor based in Washington DC. He moved to America in January 2012 after three years based in Beijing, where he covered the rise of China. Before that, he was based in New Delhi as South Asia correspondent. He has reported for The Telegraph for more than a decade, covering two Olympic Games, 9/11 in New York, the 2004 Boxing Day tsunami, the post-conflict phases in Afghanistan and Iraq and the 2011 Fukushima disaster in Japan. “Mitt Romney wants to put the spine back into US foreign policy, but he's not a warrior. He’s a pragmatist” http://blogs.telegraph.co.uk/news/peterfoster/100172414/mitt-romney-wants-to-put-the-spine-back-into-us-foreign-policy-but-hes-not-a-warrior-hes-a-pragmatist/

The Obama campaign will try and cast this as a return to the ‘dark days of Dubya’ when crusading neo-cons waged righteous war after 9/11, leading the free world into a financially ruinous quagmire from which only now, Obama is finally managing to extract us. But we this doesn't ring true for two reasons: first, America is war-weary, and Romney knows it; there is no appetite for adventure right now and second, because ‘Dubya’ himself is nowhere to be seen during this campaign. He is conspicuously and deliberately absent. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. Romney isn’t a neo-con. He’s a data-drive politician who privately knows the limits of US hard power and, in a time of recession, the public will-power to sustain further conflict – but critically he also knows that in a world in such economic and geopolitical flux, US backbone has never been more important. That is why Romney, for all his huffing and puffing about Obama and Afghanistan, is still planning to have the troops out by 2014. It is why when he talks about Iran, he talks about the iron application of sanctions and not unleashing the bunker-buster at first light. And also why there's no mention of designating China as a currency manipulator on day one of his presidency.

**No extinction—tech solves**

**Coates 2009** – former adjunct professor at George Washington University, President of the Kanawha Institute for the Study of the Future and was President of the International Association for Impact Assessment and was President of the Association for Science, Technology and Innovation, M.S., Hon D., FWAAS, FAAAS, (Joseph F., Futures 41, 694-705, "Risks and threats to civilization, humankind, and the earth”, ScienceDirect, WEA)

The most likely hit from a modest sized asteroid does not leave us without recourse. There is active research now on how to influence and what to do when we are faced with an impending asteroid hit. Keep in mind that because of the astronomical distances, paths can be extremely closely calculated while the asteroid is still far away in time and space. We could send up spacecraft to intersect and act on the threatening asteroid. One concept being developed is the gravity tractor, a large machine that would not land on the asteroid, but would create a gravity situation in which the asteroid would slowly move to a slightly different track, enough of a move to take a path avoiding the earth.

**All previous human spaceflight is insignificant – long term colonization is still infeasible.**

**Launius 10** – (2010, Roger, PhD, Curator, Planetary Exploration Programs, National Air and Space Museum, expert on Aerospace history, fellow and board member of the American Astronautical Society, “Can we colonize the solar system? Human biology and survival in the extreme space environment,” Endeavour Volume 34, Issue 3, September 2010, Pages 122-129, science direct, DH)

Although microbial life might survive the extreme conditions of space, for Homo sapien sapiens the space environment remains remarkably dangerous to life. One space life scientist, Vadim Rygalov, remarked that ensuring human life during spaceflight was largely about providing the basics of human physiological needs. From the most critical – meaning that its absence would cause immediate death, to the least critical – these include such constants available here on Earth of atmospheric pressure, breathable oxygen, temperature, drinking water, food, gravitational pull on physical systems, radiation mitigation, and others of a less immediate nature. As technologies, and knowledge about them, stand at this time, humans are able to venture into space for short periods of less than a year only by supplying all of these needs either by taking everything with them (oxygen, food, air, etc.) or creating them artificially (pressurized vehicles, centrifugal force to substitute for gravity, etc.).10 Spaceflight would be much easier if humans could go into hibernation during the extremes of spaceflight, as did the Streptococcus mitis bacteria. Resolving these issues has proven difficult but not insurmountable for such basic spaceflight activities as those undertaken during the heroic age of space exploration when the United States and the Soviet Union raced to the Moon. Overcoming the technological hurdles encountered during the Mercury, Gemini, and Apollo programs were child's play in comparison to the threat to human life posed by long duration, deep space missions to such places as Mars. Even the most sophisticated of those, the lunar landings of Project Apollo, were relatively short camping trips on an exceptionally close body in the solar system, and like many camping trips undertaken by Americans the astronauts took with them everything they would need to use while there. This approach will continue to work well until the destination is so far away that resupply from Earth becomes highly problematic if not impossible if the length of time to be gone is so great that resupply proves infeasible. There is no question that the U.S. could return to the Moon in a more dynamic and robust version of Apollo; it could also build a research station there and resupply it from Earth while rotating crews and resupplying from Earth on a regular basis. In this instance, the lunar research station might look something like a more sophisticated and difficult to support version of the Antarctic research stations. A difficult challenge, yes; but certainly it is something that could be accomplished with presently envisioned technologies.11 The real difficulty is that at the point a lunar research station becomes a colony profound changes to the manner in which humans interact with the environment beyond Earth must take place. Countermeasures for core challenges – gravity, radiation, particulates, and ancillary effects – provide serious challenges for humans engaged in space colonization (Figure 4).

#### China won’t retaliate—no impact

Bosco 9/6—national security consultant, master of laws from Georgetown (Joseph A., 9/6/12, <http://www.washingtonpost.com/opinions/china-and-a-mitt-romney-presidency/2012/09/06/32917432-f76f-11e1-a93b-7185e3f88849_story.html>, RBatra)

First, it takes two to wage a “trade war.” When China realizes that Mr. Romney is serious about declaring it a currency manipulator (which it is), wiser counsel may well prevail in Beijing. Playing by international rules is far more in China’s interest than is retaliating against free and fair trade. China could avoid the choice between dangerous escalation and embarrassing submission by preemptively starting to free its currency before a Romney inauguration.

**Mutual dependence checks trade escalation.**

**Stokes 6** (2/9/2006, Bruce, YaleGlobal, "America’s China Worries–Part II" http://yaleglobal.yale.edu/article.print?id=8733)

Any actions from Congress or the administration will be tempered by the mutually dependent nature of Sino-American trade and the conflicting self-interest of US multinational firms. China’s exports are only now beginning to impact American industry–so the political backlash has yet to come. And China bashing may never be as severe as Japan bashing in the 1980s, if only because the US manufacturing sector is far smaller today, so fewer people face losing their jobs. Moreover, one consequence of years of US investment in China is that Beijing now has hostages. Powerful American companies deeply involved in China have much to lose in a Sino-American trade war. They will lobby hard against meaningful trade action. Failure of the Bush administration to file a long-threatened WTO case against alleged Chinese failure to protect intellectual property rights–an action Hollywood once championed and now, at least in part, opposes–is an indication of the leverage such multinational firms exert in Washington. Finally, as concerned as Americans are about Chinese economic power, they worry more about Beijing’s military might. China is a military and creditor superpower in a way Japan never was. Thus Beijing must be accorded deference, even if it galls many Americans. Sino-American tensions will worsen because the underlying economic frictions have rubbed relations raw, as underscored by the WTO case. But a higher visibility for problems in the relationship should not be confused with a breakdown in relations. More skirmishes do not make a war. There is not yet the wherewithal or the leverage in Washington for a knockdown drag-out fight with Beijing over trade.

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**Extinction impacts come first**

**Bostrom 7** – Oxford philosophy professor (Nick, April, Humanity's biggest problems aren't what you think they are, transcribed from video 5:22 to 5:52, http://www.ted.com/index.php/talks/view/id/44, AG)

Then, even a one-percentage-point reduction in the extinction risk could be equivalent to this astronomical number, ten to the power of thirty two. So if you take into account future generations as much as our own, every other moral imperative or philanthropic cause just becomes irrelevant. The only thing you should focus on would be to reduce existential risk, because even a tiniest decrease in existential risk would just overwhelm any other, um, benefit you could hope to achieve.

#### Proliferation causes global chain reactions.

**Yusuf, 2009**

[Moeed, Fellow, Frederick S. Pardee Center for the Study of the Longer-Range Future Boston University, Brookings Institute Policy Paper No. 11, “Predicting Proliferation: The History of the Future of Nuclear Weapons.” Google Scholar] CMR

The domino effect thesis naturally remained prominent during this period. Again, extreme pessimism on this count has been prevalent since the revelation of the nuclear black market. CIA Director George Tenet sounded a warning immediately after this revelation: “Additional countries may decide to seek nuclear weapons as it becomes clear their neighbors and regional rivals are doing so. The ‘domino theory’ of the 21st century may well be nuclear”.151 A number of chain scenarios have been sketched.152 Most remained as abstract and farfetched as the ones suggested during the Cold War. An Eastern chain starting from Japan spreading to the Koreas, and in turn Taiwan was considered plausible. A Middle Eastern chain is often cited whereby Iranian nuclearization would prompt its Arab neighbors (Saudi Arabia and Syria) and Turkey to follow suit.153 Israel would potentially declare its status at this point. In addition, a tit-for- tat India-Pakistan arms race could cause a shift in China and Iran’s positions, in turn leading the Middle Eastern powers and Taiwan to reconsider their stances. Moreover, Russia may act in reaction to China’s vertical proliferation.154

#### Small arsenals don’t solve

Basrur, 08 [Rajesh M. Basrur, Associate Professor at RSIS He has obtained his MA and M Phil degrees in History (Delhi) and MA and PhD in Political Science (Bombay). Earlier, he was Director, Centre for Global Studies, Mumbai, India (2000-2007) and taught History and Politics at the University of Mumbai (1978-2000). “Do Small Arsenals Deter?”, International Security 32.3 (2008) 202-214, p. university of Michigan libraries]

Ward Wilson's article "The Winning Weapon? Rethinking Nuclear Weapons in Light of Hiroshima" provides a startling explanation for the end of World War II in East Asia.[1](http://muse.jhu.edu.proxy.lib.umich.edu/journals/international_security/v032/32.3basrur.html" \l "FOOT1) Wilson argues that, contrary to established wisdom, Japan's decision to surrender stemmed not from the atomic bombing of Hiroshima and Nagasaki but from the Soviet Union's declaration of war against Japan on August 8, 1945. He bases his argument on the following propositions: (1) in the context of the massive destruction caused by the conventional bombing of Japanese cities at the time, the atomic bomb was not qualitatively different; (2) the havoc caused by these attacks did not undermine Japan's determination to press on with the war in hopes of obtaining favorable terms of surrender; (3) the Japanese leadership's reaction to the devastation of Hiroshima does not reflect a perception that the atomic bomb was decisive in its effects; and (4) in contrast, the entry of the Soviet Union into the war, by eliminating available options for a favorable end, compelled Japan to surrender quickly. Wilson's analysis concludes that small nuclear arsenals may not deteraggressors**.** Whereas large nuclear forces may have such a capability (200 weapons is where the author draws the line), "the logic of deterrence may be different where small arsenals are concerned. If destroying one or two cities does not coerce an opponent, then perhaps the threat of limited nuclear retaliation does not deter when the stakes are high enough" (p. 179). In short, small nuclear powers are inherently unstable and, **logically** (though the author does not state this explicitly), such states can achieve deterrence stability only if they expand their armories.

#### Nuclear weapons can’t deter conventional wars.

**Russell, 2003** [Richard, Prof. Nat’l. Sec. Affairs – National Defense U. Near East and South Asia Center for Strategic Studies and Adjunct Prof. Security Studies in Center for Peace and Security Studies – Georgetown U. Edmund A. Walsh School of Foreign Service, Journal of Strategic Studies, “The Nuclear Peace Fallacy: How Deterrence Can Fail”, 26:1, March, InformaWorld]

Nuclear-armed adversaries might calculate that honor, fear and interest necessitate war and that its conduct could be limited and not result in nuclear weapons exchanges. For instance, a nation-state might calculate that it could initiate conventional military operations for limited objectives - such as territory - that would not threaten vital interests such as the regime survivability of the opponent, reducing the risk of nuclear retaliation. The historical record shows that non-nuclear states are willing to attack or go to war against nuclear powers. As Sagan points out, 'History suggests that while many states facing nuclear adversaries may well be cautious, some states have nevertheless launched attacks in the face of such ~ncertainty."~ Egypt and Syria attacked Israel in 1973 and Argentina invaded the United Kingdom's Falkland Islands in 1982. Israel's reputed nuclear weapons capability did not deter the Iraqis from firing Scud missiles at Tel Aviv in the 1991 Gulf War. More recently, many Indians see the 1999 Kargil crisis with Pakistan as evidence

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that the Pakistanis believed their nuclear deterrent would allow them to take the contested territory in Kashmir without risking Indian retaliation." If these states were willing to fight against nuclear powers without a nuclear retaliatory capacity, it is reasonable to assume that they would do the same with a nuclear weapons inventory at the ready. Barry Posen has speculated that the United States, had it been faced with a nuclear-armed Iraq in the 1990-91 Gulf War, might not have been deterred from retaking Kuwait. Posen argues that the United States might have launched the military campaign while 'convincing Saddam Hussein that the United States will retaliate in particularly horrible ways if he employs nuclear weapons'.56 Such resolve may have deterred Saddam from unleashing chemical or biological weapons against US force during that Gulf War. President Bush, who was concerned that Iraq might resort to weapons of mass destruction to thwart the coalition military operations against Iraq, issued a veiled ultimatum to Saddam before the onset of the ground war. In a 5 January 1991 letter to Saddam, Bush warned that 'unconscionable acts' like 'the use of chemical or biological weapons' would 'demand the strongest possible response'.57 Alternatively, Saddam may not have resorted to chemical or biological attacks against American forces in the 1991 Gulf War because they never approached Baghdad to threaten his hold on power. An aggressor nuclear state might calculate that it could achieve political objectives with conventional military operations - the destruction of opposing conventional forces and the occupation of an adversary's capital, for example - before an adversary could resort to nuclear weapons in its defense. While some might dismiss such a scenario as far-fetched, one must recall that the German military, for all of its reputed prowess at military planning, had assumed in the pre-World War I Schlieffen Plan that France could be defeated with dispatch before it turned its attention to defeating Russian forces to the east. It is a fair assumption that the Germany of old will not be the last repository of military hubris and the possession of nuclear weapons today might even encourage such folly. The victim of a conventional attack - even if intended by the aggressor to achieve limited objectives - would be under enormous psychological and emotional strain. Under such circumstances, the attacked state might judge that the aggressor intends to bring about its total defeat, forcing the victim to unleash nuclear retaliatory strikes to stave off conventional military defeat. Such a scenario was close to becoming a reality in the 1973 Middle East war. Time magazine reported that Israel had readied its nuclear weapons in response to substantial battlefield losses to Arab armies.'' More recently, during the 1987 crisis between India and Pakistan that involved extensive military maneuvers in India's territory close to Pakistan's border, the man responsible for Pakistan's uranium-enrichment program warned, 'we shall use the bomb if our existence is threatened'.59

#### Proliferation encourages conventional war

**Chari 2001** – director of the Institute for Peace and Conflict Studies in New Delhi (P.R., Stimson Center, http://www.stimson.org/southasia/pdf/NRRMChari.pdf)

The Kargil conflict truly exemplifies what is recognized as the “stability-instability” paradox. This holds that “lowering the probability that a conventional war will escalate to a nuclear war—along preemptive and other lines—reduces the danger of starting a conventional war; thus, this low likelihood of escalation—referred to here as ‘stability’—makes conventional war less dangerous, and possibly, as a result, more likely.” Indeed, nuclear weapons provided the backdrop for the several Cold War confrontations between the superpowers that occurred through their proxies in various theaters like Vietnam and Afghanistan. “The trick,” as Paul Bracken noted, “was to put the burden of escalation on the other side…. [I]ronically, having nuclear weapons probably encouraged these low-level torments, precisely by ensuring that Americans and Russians would stop just short of shooting at each other.”

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#### Massive nuclear incentives just passed

**Yurman ’12** (Nuclear energy R&D budgets spared major cuts Posted on January 5, 2012 by dyurman| 3 Comments Congress trims funding while adding new priorities By Dan Yurman Dan Yurman, nuclear blogger Dan Yurman publishes Idaho Samizdat, a blog about nuclear energy, and is a frequent contributor to ANS Nuclear Cafe.

A Congress that has public approval ratings in the single digits because of deficit-related gridlock managed to get some of the federal budget out the door for 2012. The Energy & Water Appropriation Bill, **which covers funding** for the U.S. Department of Energy, contains $768 million for nuclear energy programs. Nuclear energy at the DOE fared better than some other high profile DOE programs. The Obama administration’s poster child for a green economy—Energy Efficiency & Renewable Energy—suffered a cut of $1.9 billion, reducing the funding request by the White House by more than half. The DOE’s Science programs also saw a significant reduction of $616 million from the President’s budget. And, nationwide environmental cleanup of DOE sites suffered a reduction of $469 million. Emphasis on small modular reactors Of the $768 million in the bill for the nuclear energy program at the DOE, $439 million is allocated to nuclear energy research and development. A key element of the appropriation is a $67 million line item for licensing technical support for light water reactors. It provides funds for first-of-a-kind engineering support for two reactor designs and sites. Supporters of fast reactor SMR designs had hoped for appropriation language that would have advanced their cause, but it didn’t appear in the committee report related to licensing activities. Within a line item of $136 million for reactor concepts, $29 million is provided for advanced R&D on SMR concepts that presumably would include some fast reactor work scope.

#### Huge laundy list of nuclear incentives and construction now

**Johnson ’12** (US Campaign Trail: is nuclear in the equation? By John Johnson on Apr 25, 2012, nuclear energy expert and analyst, Nuclear Energy Insider, Nuclear Business Intelligence <http://analysis.nuclearenergyinsider.com/new-build/us-campaign-trail-nuclear-equation>

Just the same, the Obama Administration is considered a nuclear supporter, having made several moves to help jumpstart America’s nuclear energy industry. Obama plugged nuclear power during his first State Of The Union speech several years ago, and has generally been upbeat about the energy source’s future in the U.S. The Campaign Obama, a Democrat, will face Mitt Romney in the November election. Romney is expected to be named the official Republican nominee in August. While Romney has not taken a stance on nuclear energy during his campaign, the Obama administration has made significant investments in the sector, including a $450m budget request in March intended to advance the development of American-made small modular reactors (SMRs). Congress still needs to approve the authorization for funding. The SMRs are expected to be ready for commercial use within 10 years, and are intended for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes. “The Obama Administration and the Energy Department are committed to an all-of-the-above energy strategy that develops every source of American energy, including nuclear power, and strengthens our competitive edge in the global clean energy race,” U.S. Energy Secretary Steven Chu said when the program was announced. “Through the funding for small modular nuclear reactors, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.” John Keeley, manager of media relations for the Nuclear Energy Institute, said that the Obama administration has done what it can to support the deployment on new build-outs in the United States to build out nuclear, as well as supporting research and development efforts, such as those in the small reactor space. Research support In addition, the U.S. has invested $170 million in research grants at more than 70 universities, supporting research and development into a full spectrum of technologies, from advanced reactor concepts to enhanced safety design. “

#### No Asia war—multiple safeguards and reversible tensions

**Feng 10 –** professor at the Peking University International Studies [Zhu, “An Emerging Trend in East Asia: Military Budget Increases and Their Impact”, http://www.fpif.org/articles/an\_emerging\_trend\_in\_east\_asia?utm\_source=feed]

As such, the surge of defense expenditures in East Asia does not add up to an arms race. No country in East Asia wants to see a new geopolitical divide and spiraling tensions in the region. The growing defense expenditures powerfully illuminate the deepening of a regional “security dilemma,” whereby the “defensive” actions taken by one country are perceived as “offensive” by another country, which in turn takes its own “defensive” actions that the first country deems “offensive.” As long as the region doesn’t split into rival blocs, however, an arms race will not ensue. What is happening in East Asia is the extension of what Robert Hartfiel and Brian Job call “competitive arms processes.” The history of the cold war is telling in this regard. Arm races occur between great-power rivals only if the rivalry is doomed to intensify. The perceived tensions in the region do not automatically translate into consistent and lasting increases in military spending. Even declared budget increases are reversible. Taiwan’s defense budget for fiscal year 2010, for instance, will fall 9 percent. This is a convincing case of how domestic constraints can reverse a government decision to increase the defense budget. Australia’s twenty-year plan to increase the defense budget could change with a domestic economic contraction or if a new party comes to power. China’s two-digit increase in its military budget might vanish one day if the type of regime changes or the high rate of economic growth slows. Without a geopolitical split or a significant great-power rivalry, military budget increases will not likely evolve into “arms races.” The security dilemma alone is not a leading variable in determining the curve of military expenditures. Nor will trends in weapon development and procurement inevitably induce “risk-taking” behavior. Given the stability of the regional security architecture—the combination of U.S.-centered alliance politics and regional, cooperation-based security networking—any power shift in East Asia will hardly upset the overall status quo. China’s military modernization, its determination to “prepare for the worst and hope for the best,” hasn’t yet led to a regional response in military budget increases. In contrast, countries in the region continue to emphasize political and economic engagement with China, though “balancing China” strategies can be found in almost every corner of the region as part of an overall balance-of-power logic. In the last few years, China has taken big strides toward building up asymmetric war capabilities against Taiwan. Beijing also holds to the formula of a peaceful solution of the Taiwan issue except in the case of the island’s de jure declaration of independence. Despite its nascent capability of power projection, China shows no sign that it would coerce Taiwan or become **militarily** assertive over contentious territorial claims ranging from the Senkaku Islands to the Spratly Islands to the India-China border dispute. 

#### No chance of Sino-Indian war

**Nalapat, 11 –** Vice-Chair, Manipal Advanced Research Group, UNESCO Peace Chair & Professor of Geopolitics, Manipal University, Haryana State, India (MD, Pakistan Observer, “China wary as India looks East,” 11/3/, http://pakobserver.net/detailnews.asp?id=123356

The rapid economic growth since China took firmly to the Path of Peace is evidence that conflict may not be the best way to promote the national interest. Those who glibly talk of going to war against Vietnam and India, for instance, ought to examine the condition of China during the 1950s or the 1960s and see it in the 21st century, the second-biggest economy in the world, with $3 trillion worth of cash reserves, almost higher than the rest of the globe combined. Indeed, Sino-Indian trade has zoomed over the past decade, now crossing $60 billion and headed to $100 billion in two years time. In fact, the prospects are for trade between India and China to cross $300 billion in ten years, providing income and employment to millions of people on both sides of the border. This prosperity would be at risk, were there to be the cataclysmic event of a fresh Sino-Indian war.  
Both the leaders of India as well as China are aware of the centrality of peace and friendship to the economic health of both countries. Which is why the hotheads who **write** vituperative **essays** against the other country are ignored by the top leadership in Beijing or Delhi. Indeed, both Prime Minister Manmohan Singh and Premier Wen Jiabao are to meet in the beautiful island of Bali on November 19,when they attend the East Asia Summit. Both will also be meeting (albeit separately) with President Obama of the US. Such meetings will help ensure that temperatures remain cool and that differences over the South China Sea get resolved peacefully, and in a way that ensures access to resources and economic development for all sides.

#### Indian growth resilient

**Jha 2007** – professor and executive director of the Australia South Asia Research Centre at Australian National University (Raghbendra, Social Science Research Network, “The Indian View of Economic Development: Resilience and the Quest for Growth”, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1002263)

The central theme of this paper is that the Indian economy has been remarkably resilient and been able to adapt its quest for growth to changes in circumstances in both the domestic and the global economy and is now poised for sustained progress. At the time of independence after centuries of stagnation, even decline, India's confidence and society stood shaken. The licence quota raj ensured that three decades of unimpressive growth followed even as developing East and Southeast Asia were surging ahead. Yet once the controls were slackened the Indian economy was able to discover its innate vitality. Growth has remained high since the mid 1980s and has even started to accelerate of late, albeit with a few short-run drops. This paper is an account of the resilience of the Indian economy as well as its quest for higher rates of growth. In the process the Indian economy and society are being transformed and there are clear signs of a much stronger player emerging on the global stage in the near future. The plan of this paper is as follows. It provides a historical backdrop for India's growth experience in section II, emphasizing the resilience of the economy to adverse shocks over a period of almost 400 years and the pick-up of economic growth once some of these constraints were lifted. Section III discusses some factors contributing to the acceleration in India's growth rate. Section IV outlines India's performance in external trade and section V presents two faces of the new India - a dynamic sector (automobiles) and a laggard (agriculture). Section VI concludes.

#### The recession and Mumbai attacks show that India is basically immune to major shocks

**Tharoor 2009** (Shashi, former under secretary general of the United Nations, "The global recession will stop at India's border" The Daily Star, http://www.dailystar.com.lb/article.asp?edition\_id=10&categ\_id=5&article\_id=100139)

With the world's most developed economies reeling under the incubus of what is already being called the Great Recession, India at the beginning of the year took stock and issued a revised estimate for GDP growth in the 2008-2009 fiscal year. Its projection came out at a healthy 7.1 percent. It is striking that even amid all the doom and gloom assailing markets around the world, there is no fear of a recession in India. Even the pessimists are speaking only of lower positive growth. This is quite a turnabout for an economy that for many years had crept along at what was derisively called the "Hindu rate of growth" - around 3 percent - while much of the rest of Asia shot ahead. For more than four decades after India's independence in 1947, the country suffered from the economics of nationalism, which equated political independence with economic self-sufficiency and, therefore, relegated the Indian economy to bureaucratic protectionism and stagnation. But, since 1991, India has liberalized its economy and profited from the advantages of globalization. The country's tech-savvy information-technology pioneers, software engineers, and call-center operators have made the country an economic success story. India has managed to multiply its per capita income levels many times over since 1950, and has done so far faster in recent years than the United Kingdom or the United States did during and after their industrial revolutions. In the last 15 years, India has pulled more people out of poverty than in the previous 45 years.

**STOPPED**

This has amounted to 10 million people a year on average in the last decade. The country has visibly prospered, and, despite population growth, per capita income has grown faster than ever before. The current **financial crisis is unlikely to change the basic** success story. India's financial system suffers from few of the creative and risky derivative instruments that caused such problems in the Western economies. A tradition of conservative banking regulation and the presence of a tough-minded governor of the Reserve Bank (India's central bank) ensured that the Indian banking system did not acquire the toxic debts flowing from sub-prime loans, credit-default swaps, and over-inflated housing prices that assailed banks in Western countries. The negative effect of the United States' financial setbacks on Indian stock markets, therefore, have made little sense, since they bore no relation to the real value of Indian companies. Instead, the decline in Indian stocks has reflected foreign investors' liquidity problems: The investors were forced to withdraw from their holdings in India because they needed their money back home, not because it wasn't growing for them. Of course, economies that depend on foreign investment are bound to be hurt nowadays, because those investors have less capital to invest. However, there are two reasons to be confident that India will weather the storm. The first one is that India has considerable resources of its own to apply toward growth, and the country has proven itself skilled at the art of channeling domestic savings into productive investments. And second, once things have begun to stabilize in the West, investors looking for a place to put their money will look once again toward India, owing to the opportunities for growth and the sheer size of the Indian market. That said, India has relied much less on foreign direct investment than China, and has even exported foreign direct investment to countries of the Organization for Economic Cooperation and Development. Despite being seen as a poster child for the benefits of globalization, India is not unduly dependent on global flows of trade and capital. India's economy relies on external trade for less than 20 percent of its GDP; its large and robust internal market accounts for the rest. India's private sector is efficient and entrepreneurial, and its capital and management skills have proven appropriate to control and manage assets in the sophisticated financial markets of the developed West. India clearly has the basic systems it needs to operate a 21st-century economy in an open and globalizing world. Obviously, the terrorist attacks of late November 2008 in Mumbai complicated this story. The terrorists attacked India's financial nerve-center and commercial capital, a city emblematic of the country's energetic thrust into the 21st century. They struck at symbols of the prosperity that have made the Indian model so attractive to the globalizing world, as well as a magnet for investors and tourists alike. Indeed, by striking hotels favored by foreign businessmen and visitors, the attacks undermined the confidence of those whom India needs to sustain its success story. Terror may add to the time India will need to recover from the economic crisis. But India is already bouncing back. The hotels assaulted and burned in November reopened their doors a month later. Investors are returning, and foreign direct investment inflows this fiscal year are set to exceed the $25 billion received in 2007-2008. At the end of February, Indian Prime Minister Manmohan Singh assured Parliament that "India would emerge the least affected among the countries of the world from the current economic crisis." So, for those looking for signs of recovery from the global economic downturn, India remains the place to watch. According to the World Bank's annual assessment of Global Economic Prospects, India's economy could even triple in size in the next 15 to 20 years. A few more slumdogs may become millionaires by then.

# Octas – Neg v MSU HR

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### 1nc t

#### Interpretation:

#### Increase requires specification

**OED, 89** (Oxford English Dictionary, 2nd edition, Online through Emory)

increase, v.

3. To become greater in some specified quality or respect; to grow or advance in.

#### Substantial is meaningful with firm basis

**WordNet, 6** (WordNet® 3.0, © 2006 by Princeton University. Dictionary.reference.com/ browse/substantial)

Substantial, adjective

 2. having a firm basis in reality and being therefore important, meaningful, or considerable; "substantial equivalents"

#### Incentives require distinct mechanisms—not just encouragement

**Marbek Resource Consultants, 6** (Report prepared for the Canadian Council of Ministers of the Environment “NATIONAL EXTENDED PRODUCER RESPONSIBILITY (EPR) WORKSHOP,” 9/27, http://www.ccme.ca/assets/pdf/epr\_wkshp\_rpt\_1376\_e.pdf

The suggestion was made, and supported by others, that the word “incentives” for producers be replaced with the word “encourage”, since the term “incentive” usually implies a particular mechanism (#1).

#### Financial incentives cannot be discussed without specification of type

**Webb, 93** – lecturer in the Faculty of Law at the University of Ottawa (Kernaghan, “Thumbs, Fingers, and Pushing on String: Legal Accountability in the Use of Federal Financial Incentives”, 31 Alta. L. Rev. 501 (1993)  Hein Online)

In this paper, "financial incentives" are taken to mean disbursements 18 of public funds or contingent commitments to individuals and organizations, intended to encourage, support or induce certain behaviours in accordance with express public policy objectives. They take the form of grants, contributions, repayable contributions, loans, loan guarantees and insurance, subsidies, procurement contracts and tax expenditures.19 Needless to say, the ability of government to achieve desired behaviour may vary with the type of incentive in use: up-front disbursements of funds (such as with contributions and procurement contracts) may put government in a better position to dictate the terms upon which assistance is provided than contingent disbursements such as loan guarantees and insurance. In some cases, the incentive aspects of the funding come from the conditions attached to use of the monies.20 In others, the mere existence of a program providing financial assistance for a particular activity (eg. low interest loans for a nuclear power plant, or a pulp mill) may be taken as government approval of that activity, and in that sense, an incentive to encourage that type of activity has been created.21 Given the wide variety of incentive types, it will not be possible in a paper of this length to provide anything more than a cursory discussion of some of the main incentives used.22 And, needless to say, the comments made herein concerning accountability apply to differing degrees depending upon the type of incentive under consideration.

By limiting the definition of financial incentives to initiatives where public funds are either disbursed or contingently committed, a large number of regulatory programs with incentive effects which exist, but in which no money is forthcoming,23 are excluded from direct examination in this paper. Such programs might be referred to as indirect incentives. Through elimination of indirect incentives from the scope of discussion, the definition of the incentive instrument becomes both more manageable and more particular. Nevertheless, it is possible that much of the approach taken here may be usefully applied to these types of indirect incentives as well.24 Also excluded from discussion here are social assistance programs such as welfare and ad hoc industry bailout initiatives because such programs are not designed primarily to encourage behaviours in furtherance of specific public policy objectives. In effect, these programs are assistance, but they are not incentives.

#### Vote neg—now is too late to specify financial incentives type:

#### 1. Ground – “incentives” is the direct object of topical action, ALL negative strategies are premised off of it and clarification makes them a conditional moving target.

#### 2. Topic education—also turns solvency

**Arvizu, 7** - Director National Renewable Energy Laboratory (Dan, CQ Congressional Testimony, “ENCOURAGING SOLAR ENERGY,” 6/19, lexis

We applaud the Committee for its continuing examination of solar and other sources of renewable electricity and fuels. If we are to ensure the nation receives the full range of benefits that renewable energy technologies can provide, we will need a carefully balanced blend of new technology, market acceptance and government policies. It is not a question of whether to rely solely on the market, or on new research, or on government action, as we work to solve our energy problems. To accelerate deployment of renewable energy technologies, we need to effectively combine all three. It's also crucial that this mix of technology, markets and policies be crafted so that each works in conjunction with the others. The reality is that distinct renewable energy technologies - be they solar photovoltaic, solar thermal, wind, biomass power, biofuels or geothermal - are in different places in terms of their economics, technological maturity and market acceptance. While a broad range of policies are needed to spur on these varied technologies, the specifics of policies and incentives to be enacted ideally must be tailored to fit the unique requirements of each of the systems and devices we are seeking to deploy.

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#### Interpretation – energy production excludes research and development – it is a distinctly a PRE-production activity

Doug Koplow (the founder of Earth Track in Cambridge, MA. He has worked on natural resource subsidy issues for 20 years, primarily in the energy sector) 2004 "Subsidies to Energy Industries" Encyclopedia of Energy Vol 5 2004www.earthtrack.net/files/Energy%20Encyclopedia,%20wv.pdf

3. SUBSIDIES THROUGH THE FUEL CYCLE Because no two fuel cycles are exactly the same, examining subsidies through the context of a generic fuel cycle is instructive in providing an overall framework from which to understand how common subsidization policies work. Subsidies are grouped into preproduction (e.g., R&D, resource location), production (e.g., extraction, conversion/generation, distribution, accident risks), consumption, postproduction (e.g., decommissioning, reclamation), and externalities (e.g., energy security, environmental, health and safety). 3.1 Preproduction Preproduction activities include research into new technologies, improving existing technologies, and market assessments to identify the location and quality of energy resources.

#### Violation – the affirmative gives incentives for researching and testing new equipment for a new type of energy that doesn’t exist yet

#### That’s a voter

#### First, limits – allowing research and development snowballs to tangential affirmatives that makes research and preparation impossible

#### Second, precision – maintaining a distinction between direct incentives for production and ones that merely motivate is key to coherent, historical policy analysis and clarity

### 1nc cp

The United States federal government should not substantially augment funding for production of magnetic fusion energy in the United States. The United States federal government should shift its current domestic magnetic fusion research away from short-pulse tokamak research and towards computation, simulation, and stellarator research for magnetic fusion.

#### This solves the entire case. The CP rebalances US fusion research priorities to capitalize on US strengths while letting ITER assume responsibility for tokamak construction and research. This harmonizes the US fusion program internationally, retains the STEM pipeline, and functions within current diminishing fusion budgets.

**Wurden, 12** - LANL Fusion Energy Sciences Program Manager(Glen, “Leading Fusion Research via Alternative Pathways” 8/8, <http://fire.pppl.gov/Wurden%20White%20Paper-3.pdf>)

The USA has clearly ceded the lead in tokamak research to other countries in the last 15 years. Our present (30 year old) copper machines, while workhorses with excellent diagnostic sets and research teams, epitomize the peak of research capabilities possible in the line of short-pulse tokamaks. They have a limited research life ahead of them. Furthermore, even though the NSTX-Upgrade is welcomed (by most people), it is still is only an intermediate facility in the tokamak line. Given our present state of knowledge about long-pulse issues, disruptions and ELMS, blanket issues, and the cost of DT tokamaks, we might as well recognize that FNSF is not only premature but carries substantial financial and technical risks if undertaken before successfully operating burning plasmas in ITER. It doesn’t make sense for the USA to embark on this path before ITER is shown to be successful.

Where can (and does) the USA lead in magnetic fusion research? In theory, computation, and simulation, without a doubt. Another answer is in (call it what you will) “alternates” at the concept exploration and proof of principle stage of development. Both of these areas have the advantage of big returns for small investments. But both of these areas have faced heavy reductions in recent years. The Fusion Simulation Project is presently idling at best. The advantage of pursuing approaches that don’t face the known limitations of tokamaks, are that outstanding science can still be done at the $5M/year level of effort, while making high-risk, high-long-term payoffs possible. We could easily envision a diverse spectrum of such efforts, spread throughout the country, even with our present financial limitations. A US program built on a portfolio of several small “advanced concept” plasma physics devices tied together with an intermediate sized state-of-the-art 3D magnetic confinement device would provide a unique strategic platform for the base program regardless of the outcome of the ITER project.

But to do this, in flat or declining budgets requires the planned and orderly closure of Alcator C-Mod and DIII-D experiments, while simultaneously transitioning the research teams to other, new efforts, whether within the USA or international. It also requires looking very carefully at the wisdom of NSTX-U versus (for example) a renewed stellarator effort at PPPL. This transition should be well planned and carefully executed to: 1) maintain strong support for a lead US role in one or more key ITER physics areas, 2) maintain continuity in providing critical hightemperature plasma data with which to validate advanced numerical codes and theories and 3) provide vibrant, cutting-edge, experiments that will facilitate quid-pro-quo international scientific exchanges.

(I) The world fusion community (rightly or wrongly) believes that ITER is the only device capable of accessing a stable, steadily burning plasma state: the cutting edge frontier of high-temperature plasma physics; a supreme technical challenge.

(II) It is unacceptable to put forth a scientific fallacy that our existing large rho-star number, non-burning, copper tokamaks in the U.S. can somehow "look beyond" ITER, or "circumvent" ITER to produce meaningful scientific information about a Demo fusion plasma state twenty years off. The secondary argument that we need to continue operating these machines to sustain “the workforce" and attract/train young scientists for ITER is also out of step with reality. Scientific research drives the graduate workforce, not the other way around. Other training platforms are possible. When ITER is ready "they will be attracted and they will come": It only takes 5 years to get a PhD.

(III) The US should use the knowledge gained in ITER to establish a path forward beyond ITER. Begin to do this now by strengthening its predictive understanding, using theory, simulation and integrated modeling programs, as the most cost effective way to participate in ITER. Here the U.S. can sustain its world-class status in the fusion arena for decades to come, despite a lackluster investment in fusion energy science.

(IV) The US fusion program must invest in, and investigate within the peer review process, high-gain, non-toroidal fusion approaches that use magnetic fields such as the MTF and MagLIF pulsed power options, as well as foreign tokamak and upgraded devices coming on line. The most attractive fusion pathways have always had elements of high density, high beta, and high magnetic fields. Jim Tuck recognized this in the 1960’s, and it is still true today.

### 1nc cp

The 50 state governments and relevant subnational actors should establish energy financing banks to substantially augment funding for production of magnetic fusion energy in the United States.

#### States should establish energy finance banks to do the plan – solves all the case and doesn’t require new spending

**Muro and Berlin, 9/12**/12 – \*senior fellow and policy director of the Metropolitan Policy Program at Brookings AND \*\* Senior Vice President for Policy and Planning, and General Counsel at the Coalition for Green Capital (Mark and Ken, “State Clean Energy Finance Banks: New Investment Facilities for Clean Energy Deployment”, <http://www.brookings.edu/~/media/research/files/papers/2012/9/12%20state%20energy%20investment%20muro/12%20state%20energy%20investment%20muro>)

Given these challenges, states that want to realize the benefits of clean energy deployment should consider a new approach to funding clean energy programs. Specifically, they should investigate the possibility of developing state clean energy finance banks that use limited public dollars and leverage private capital to provide a combination of low-interest rate funding that makes clean energy projects competitive and low-cost 100-percent up-front loans for energy efficiency projects. Such an approach would address the deployment and diffusion challenges faced by clean energy technologies while recognizing that federal and state appropriations, tax credits, and other incentives and subsidies will be sharply diminished in the years ahead because of the budget crisis at all levels of government. Likewise, the development of such finance entities would address the need for states to develop a new paradigm for financing strong clean energy and energy efficiency projects as part of a push to develop strong regional industries. So-called “clean energy finance banks” or “green banks” are ideally suited to solve the present problems because they offer a practical way for states to make available leveraged, low-cost financing for project developers in their states. First, they can be developed out of existing state programs while bringing into the enterprise the equivalent of substantial new resources given their ability to leverage funds. Likewise, because the banks would provide debt financing, they would be repaid on their loans, putting them in the position to borrow funds and to establish revolving loan funds that would provide funds that could be reinvested without new sources of financing. Furthermore, clean energy finance banks, if established as independent institutions, would be able to issue revenue bonds without the full faith and credit of the state and without the restrictions facing states, which have limited borrowing capacity. Finally, clean energy finance banks could efficiently seek large investors with patient, longterm capital who are seeking a long-term, conservative rate of return, such as pension fund investors.

#### It’s legitimate and politics is a net benefit

**Harvard Law Review, 6** – the author isn’t named but the qualifications are: John M. Olin Fellow in Law, Economics, and Business at Harvard Law School (119 Harv. L. Rev. 1855, “STATE COLLECTIVE ACTION\*”, April, lexis)

Consider now the reasons why states may act collectively. In the simplest terms, collective action may be more desirable than individual state action because it opens a panoply of otherwise unavailable policy choices and may be more desirable than federal action because it allocates power to a better-positioned actor. n12 These advantages may exist **[\*1859]** because regional organizations have better information, are better positioned to act on that information, or avoid duplicative costs or coordination problems. n13 Also, collective action may be desirable politically because it may make certain programs either more or less politically salient. n14 Similarly, political actors may want to act collectively because doing so spreads or diversifies political risk. n15 Lastly, collective action may provide opportunities for economies of scale or rent-seeking behavior that states cannot achieve independently. n16 Some brief examples of how states may act collectively illustrate the importance of the topic. n17 As in the stylized examples, states may act collectively to reduce pollution. Groups of states also could develop plans to use common reserves of natural resources, including oil fields or aquifers that cross state lines, or plans to allocate the use of rivers, lakes, forests, or other natural resources. They may also regulate wildlife that lives in multiple states, either to protect that wildlife or to use it for commercial purposes. States may take similar action to regulate or allocate energy or to develop interstate transit infrastructure, such as highways, rail lines, or regional airports. States may regulate the production or distribution of goods or create economic development organizations organized either geographically or by some other trait, such as agricultural or oil and gas production. They also may wish to regulate certain industries or set labor standards in common ways or may wish to regulate products commonly by adopting similar production standards or tort rules. As a final example - although one can imagine many other motivations for state collective action - states may collectivize to provide better social welfare or governmental insurance programs.

### 1nc da

#### Obama is winning but it’s very close

**Blumenthal, 10/25/12** - Mark Blumenthal is the senior polling editor of the Huffington Post and the founding editor of Pollster.com.Mark Blumenthal is the senior polling editor of the Huffington Post and the founding editor of Pollster.com (“Presidential Polls Counter Romney Surge Myth” Huffington Post, http://www.huffingtonpost.com/2012/10/25/presidential-polls-romney-surge\_n\_2016066.html

Collectively, the new polls of the past 24 hours have done nothing to change the standings in the most crucial battleground states. Obama continued to hold leads of 2 to 3 percentage points in Ohio, Iowa, Nevada and Wisconsin, four states that currently combine with the states where Obama leads by larger margins to create a 277 electoral vote majority, seven more than the 270 needed to win.

Romney continues to lead in North Carolina and retain a narrow edge in Florida, states that would net him 233 electoral votes along with other states where Romney leads by larger margins. Those totals leave 26 electoral votes up for grabs in New Hampshire, Colorado and Virginia, states where the tracking model shows Obama leading by very narrow margins of 2 percentage points or less.

Collectively, the trends of the past week provide a reality check to two myths that have emerged in recent campaign coverage.

The first is that Romney has been "surging" since the first debate. While the debate certainly boosted Romney's standing in the polls, trends over the past two weeks have been negligible, with the leader seesawing nationally within a range of roughly one percentage point. Over the same period, the standings within the key battleground states have also remained constant. Other poll tracking models have shown the same patterns.

#### The plan is a costly distraction from Obama’s hurricane focus – he’ll be blamed for not prioritizing the hurricane and it will cost him the election

**Associated Press, 10/28/12** (“President Barack Obama balancing Hurricane Sandy response with campaigning”

<http://www.masslive.com/news/index.ssf/2012/10/president_barack_obama_balanci.html>)

President Barack Obama has spent months trying to balance his re-election bid with running the government.

Now, just when his campaign needs him the most, with little more than a week before the election, his official job is beckoning.

Republican challenger Mitt Romney, too, faces questions about how to conduct his campaign as a superstorm charges toward the East Coast. But as president, it's Obama who oversees the federal government's preparations for the looming storm and it's Obama who will bear the responsibility for any missteps.

With that in mind, Obama scrapped campaign events Monday night and Tuesday morning. He planned to return to the White House late Monday to monitor the storm and the government's response.

"This is an example, yet again, of the president having to put his responsibilities as commander in chief and as leader of the country first, while at the same time he pursues his responsibilities as a candidate for re-election," Josh Earnest, a White House spokesman, told reporters traveling with Obama to a campaign event Saturday in New Hampshire.

Still, ripping up Obama's strategically planned travel schedule was something his Chicago-based campaign was loath to do unless absolutely necessary.

In the tight race, the candidates have few opportunities left to blitz through the most competitive states, trying to build momentum and make a final pitch to undecided voters.

The president's handling of the storm could sway those late-breaking voters. If Obama is perceived as a strong leader who shows command in a crisis, some undecided voters may be compelled to back the president. But a botched response or a sense that he's putting politics over public safety could weaken his support at a point in the race where there's little chance to reverse course.

"I think that the president of the United States is the commander in chief. The American people look to him, and I'm sure he will conduct himself and play his leadership role in a fine fashion. So I would imagine that might help him a little bit," said Arizona Sen. John McCain, who lost to Obama in 2008.

"But I'm not sure it will affect votes. People have been exposed to this very long campaign," he said on CBS' "Face the Nation."

Obama advisers say they've learned the lessons from President George W. Bush's widely criticized response to Hurricane Katrina. Bush was seen as ineffective and out of touch, and his presidency never recovered.

That's why Obama's team has moved quickly throughout the year to avoid the impression that the president was shirking his responsibilities, even as the campaign ramped up.

#### Fusion is misperceived by the public – sparks broad backlash

**Economist, 10** (“Expensive Iteration: A huge international fusion-reactor project faces funding difficulties” 6/22, <http://www.economist.com/node/16635938>)

VIABLE nuclear fusion has been only 30 years away since the idea was first mooted in the 1950s. Its latest three-decade incarnation is ITER, a joint effort by the European Union (EU), America, China, India, Japan, Russia and South Korea to construct a prototype reactor on a site in Cadarache, France, by 2018. If all goes to plan, in about 30 years it will be reliably producing more energy than is put in.

The International Thermonuclear Experimental Reactor became plain ITER following public anxiety about anything that has “thermonuclear” next to “experimental” in its name. ITER aims to produce energy by fusing together the nuclei of hydrogen atoms, confined in a magnetic field at high temperatures—a process akin to that which powers the sun.

For all its cosmic ambition, ITER has run into the earthiest of difficulties: spiralling costs. The project was never going to be cheap. Initial projections in 2006 put its price at €10 billion ($13 billion): €5 billion to build and another €5 billion to run and decommission the thing. Since then construction costs alone have tripled.

#### Romney win would crush US-Russian relations and Central Asian stability

Mark Adomanis, 4-17-2012; analyst for Forbes, Mitt Romney's Incoherent Russia Policy http://www.forbes.com/sites/markadomanis/2012/04/17/mitt-romneys-incoherent-russia-policy/

According to his campaign’s own words, Romney will basically ignore Central Asian authoritarianism, which literally everyone agrees is far nastier, more brutal, and more open than anything the Russians are guilty of, while simultaneously focusing on democracy promotion and regime change in Russia. That is to say Romney’s Russia policy will, to a large extent, be based on relentlessly confronting the Kremlin. But won’t the Kremlin react extremely poorly to an American policy that seeks not only to co-opt its longtime allies in Central Asia and but to depose the current regime? According to Romney, the answer is no: the Kremlin will be so impressed by the bravery and willpower of this American effort that it will more actively support American goals (though precisely why it would react positively to an open challenge to its authority is left unsaid). Despite the endless accusations of Obama’s “double standards” and his “moral relativism” Romney is quite openly embracing his own set of double-standards. As the campaign’s website itself says, one set of moral values will be applied to the Central Asians while a completely different, and much more exacting, set of values will be applied to the Russians. It goes almost without saying that this is the sort of bad-faith posturing that really drives the Russians batty and that they react very poorly to this sort of thing. While I personally am of a strongly realist orientation, and have little patience for the attempt to inject “values” into an international system that naturally tends to be amoral and anarchic, I understand that there is a coherent case to be made for the neoconservative position. Very intelligent people, including many of my friends and acquaintances, hold views similar to the ones Romney espouses towards, and while I can’t say I find them convincing I’m not nearly egotistical enough to think that my own views are the only “correct” ones. However Romney’s mix-and-match approach, a dollop of realism here, a large dose of neoconservatism there, a dash of accommodation here and a big helping of confrontation there, will not be a sober-minded attempt to appeal to everyone, but will instead be a disjointed mess that will simultaneously alienate and antagonize almost everyone in the region. While the foreign policy of any American president will never be perfectly within the bounds of a single school of thought, Romney’s entire Russia policy is a case study in avoiding hard choices. It quite openly attempts to be all things to all people: realists can look at it and see parts of their ideology, and neoconservatives can look at it and see parts of their ideology too. Romney will both openly confront the Russians and get more concessions from them, support democracy and work hand-in-hand with some of the world’s most repressive regimes, pursue missile defense and get Russian cooperation on Afghanistan, expand NATO and convince Russia to stop arming Syria, work to undermine Russia’s energy interests and get it to isolate Iran. There are no hard choices, no nasty compromises, and no trade-offs between values and interests: there is just the unapologetic exercise of American power and the positive consequences inevitably associated with it. Obama is himself very(!) far from being perfect, but at least his foreign policy seems to be a reasonably coherent attempt to advance America’s interests while avoiding, to the greatest extent possible, needless antagonism. As far as I can tell Romney’s main position is that Obama is bad, that everything he’s done is bad too, and that Romney would do better because… he said he will that’s why! There’s a deeper lesson in there about how this campaign is going to be waged, and a rather troubling one at that.

#### Russian relations prevent global nuclear war and terrorism and Iran crisis

**NTI 9** [Global Security Newswire, “Russia Open to U.S. Suggestions on Improving Relations, Curbing Iran” http://www.globalsecuritynewswire.org/gsn/nw\_20090318\_4374.php 3/19]

Russian leaders have shown an interest in improving ... outcome," the report adds (Nixon Center release, March 16).

Russian leaders have shown an interest in improving relations with Washington, a thaw that could enable the two former Cold War rivals to cooperate more closely on efforts to curb Iran's nuclear ambitions, the Washington Post reported today (see GSN, March 16).

The two nations experienced growing tensions during the Bush administration as they disagreed over a variety of international security issues, particularly a U.S. plan to deploy missile defenses in Eastern Europe as a hedge against potential Iranian missile threats. Regarding Iran, Russia has cautiously supported some U.N. Security Council resolutions setting mild sanctions against Iran for its refusal to freeze its uranium enrichment program, but Moscow scuttled U.S. efforts last year to boost those penalties.

Trying to change the climate, U.S. President Barack Obama has sent his counterpart a letter seeking a packaged solution to U.S.-Russian disputes, and Moscow appears interested, according to some analysts and officials.

Russian officials "want to send a message to the Obama administration that they're prepared to have a new relationship, but it will have to be quid pro quo," said Dmitri Simes, president of the Washington-based Nixon Center. "If they have to sacrifice their special relationship with Iran, they want to see a change in their relationship with the United States" (Pan/DeYoung, Washington Post, March 18).

Simes directed a commission that called on the Obama administration this week to recognize the importance of good Russian relations to a breadth of international issues, including the Iranian nuclear crisis.

"Without deep Russian cooperation, **no strategy is likely to succeed** in preventing the proliferation of nuclear weapons, **nuclear terrorism and nuclear war,"** says the commission report. "Working with Moscow to solve the Iran problem, including possibly strengthening sanctions on Iran if necessary, should be a top U.S. priority."

"However, America is unlikely to be able to resolve the Iranian nuclear issue solely through sanctions, and Russia's cooperation could contribute substantially to a successful outcome," the report adds (Nixon Center release, March 16).

#### Romney causes massive foreign backlash and nuclear wars around the globe

Doug Bandow 5-15-2012; Doug Bandow is a senior fellow at the Cato Institute and former special assistant to President Ronald Reagan. “Mitt Romney: The Foreign Policy of Know-Nothingism” http://www.cato.org/publications/commentary/mitt-romney-foreign-policy-knownothingism

Romney’s overall theme is American exceptionalism and greatness, slogans that win public applause but offer no guidance for a bankrupt superpower that has squandered its international credibility. “This century must be an American century,” Romney proclaimed. “In an American century, America leads the free world and the free world leads the entire world.” He has chosen a mix of advisers, including the usual neocons and uber-hawks — Robert Kagan, Eliot Cohen, Jim Talent, Walid Phares, Kim Holmes, and Daniel Senor, for instance — that gives little reason for comfort. Their involvement suggests Romney’s general commitment to an imperial foreign policy and force structure. Romney is no fool, but he has never demonstrated much interest in international affairs. He brings to mind George W. Bush, who appeared to be largely ignorant of the nations he was invading. Romney may be temperamentally less likely to combine recklessness with hubris, but he would have just as strong an incentive to use foreign aggression to win conservative acquiescence to domestic compromise. This tactic worked well for Bush, whose spendthrift policies received surprisingly little criticism on the right from activists busy defending his war-happy foreign policy. The former Massachusetts governor has criticized President Obama for “a naked political calculation or simply sheer ineptitude” in following George W. Bush’s withdrawal timetable in Iraq and for not overriding the decision of a government whose independence Washington claims to respect. But why would any American policymaker want to keep troops in a nation that is becoming ever more authoritarian, corrupt, and sectarian? It is precisely the sort of place U.S. forces should not be tied down. In contrast, Romney has effectively taken no position on Afghanistan. At times he appears to support the Obama timetable for reducing troop levels, but he has also proclaimed that “Withdrawal of U.S. forces from Afghanistan under a Romney administration will be based on conditions on the ground as assessed by our military commanders.” Indeed, he insisted: “To defeat the insurgency in Afghanistan, the United States will need the cooperation of both the Afghan and Pakistani governments — we will only persuade Afghanistan and Pakistan to be resolute if they are convinced that the United States will itself be resolute,” and added, “We should not negotiate with the Taliban. We should defeat the Taliban.” Yet it’s the job of the president, not the military, to decide the basic policy question: why is the U.S. spending blood and treasure trying to create a Western-style nation state in Central Asia a decade after 9/11? And how long is he prepared to stay — forever? On my two trips to Afghanistan I found little support among Afghans for their own government, which is characterized by gross incompetence and corruption. Even if the Western allies succeed in creating a large local security force, will it fight for the thieves in Kabul? Pakistan is already resolute — in opposing U.S. policy on the ground. Afghans forthrightly view Islamabad as an enemy. Unfortunately, continuing the war probably is the most effective way to destabilize nuclear-armed Pakistan. What will Romney do if the U.S. military tells him that American combat forces must remain in Afghanistan for another decade or two in order to “win”? The ongoing AfPak conflict is not enough; Romney appears to desire war with Iran as well. No one wants a nuclear Iran, but Persian nuclear ambitiions began under America’s ally the Shah, and there is no reason to believe that the U.S. (and Israel) cannot deter Tehran. True, Richard Grenell, who briefly served as Romney’s foreign-policy spokesman, once made the astonishing claim that the Iranians “will surely use” nuclear weapons. Alas, he never shared his apparently secret intelligence about the leadership in Tehran’s suicidal tendencies. The Iranian government’s behavior has been rational even if brutal, and officials busy maneuvering for power and wealth do not seem eager to enter the great beyond. Washington uneasily but effectively deterred Joseph Stalin and Mao Zedong, the two most prolific mass murderers in history. Iran is no substitute for them. Romney has engaged in almost infantile ridicule of the Obama administration’s attempt to engage Tehran. Yet the U.S. had diplomatic relations with Hitler’s Germany and Stalin’s Russia. Washington came to regret not having similar contact with Mao’s China. Even the Bush administration eventually decided that ignoring Kim Jong-Il’s North Korea only encouraged it to build more nuclear weapons faster. Regarding Iran, Romney asserted, “a military option to deal with their nuclear program remains on the table.” Building up U.S. military forces “will send an unequivocal signal to Iran that the United States, acting in concert with allies, will never permit Iran to obtain nuclear weapons... Only when the ayatollahs no longer have doubts about America’s resolve will they abandon their nuclear ambitions.” Indeed, “if all else fails... then of course you take military action,” even though, American and Iranian military analysts warn, such strikes might only delay development of nuclear weapons. “Elect me as the next president,” he declared, and Iran “will not have a nuclear weapon.” Actually, if Tehran becomes convinced that an attack and attempted regime change are likely, it will have no choice but to develop nuclear weapons. How else to defend itself? The misguided war in Libya, which Romney supported, sent a clear signal to both North Korea and Iran never to trust the West. Iran’s fears likely are exacerbated by Romney’s promise to subcontract Middle East policy to Israel. The ties between the U.S. and Israel are many, but their interests often diverge. The current Israeli government wants Washington to attack Iran irrespective of the cost to America. Moreover, successive Israeli governments have decided to effectively colonize the West Bank, turning injustice into state policy and making a separate Palestinian state practically impossible. Perceived American support for this creates enormous hostility toward the U.S. across the Arab and Muslim worlds. Yet Romney promises that his first foreign trip would be to Israel “to show the world that we care about that country and that region” — as if anyone anywhere, least of all Israel’s neighbors, doesn’t realize that. He asserted that “you don’t allow an inch of space to exist between you and your friends and allies,” notably Israel. The U.S. should “let the entire world know that we will stay with them and that we will support them and defend them.” Indeed, Romney has known Israeli Prime Minister Benjamin Netanyahu for nearly four decades and has said that he would request Netanyahu’s approval for U.S. policies: “I’d get on the phone to my friend Bibi Netanyahu and say, ‘Would it help if I say this? What would you like me to do?’” Americans would be better served by a president committed to making policy in the interests of the U.S. instead. Romney’s myopic vision is just as evident when he looks elsewhere. For instance, he offered the singular judgment that Russia is “our number one geopolitical foe.” Romney complained that “across the board, it has been a thorn in our side on questions vital to America’s national security.” The Cold War ended more than two decades ago. Apparently Romney is locked in a time warp. Moscow manifestly does not threaten vital U.S. interests. Romney claimed that Vladimir “Putin dreams of ‘rebuilding the Russian empire’.” Even if Putin has such dreams, they don’t animate Russian foreign policy. No longer an ideologically aggressive power active around the world, Moscow has retreated to the status of a pre-1914 great power, concerned about border security and international respect. Russia has no interest in conflict with America and is not even much involved in most regions where the U.S. is active: Asia, the Middle East, and Latin America. Moscow has been helpful in Afghanistan, refused to provide advanced air defense weapons to Iran, supported some sanctions against Tehran, used its limited influence in North Korea to encourage nuclear disarmament, and opposes jihadist terrorism. This is curious behavior for America’s “number one geopolitical foe.” Romney’s website explains that he will “implement a strategy that will seek to discourage aggressive or expansionist behavior on the part of Russia,” but other than Georgia where is it so acting? And even if Georgia fell into a Russian trap, Tbilisi started the shooting in 2008. In any event, absent an American security guarantee, which would be madness, the U.S. cannot stop Moscow from acting to protect what it sees as vital interests in a region of historic influence. Where else is Russia threatening America? Moscow does oppose NATO expansion, which actually is foolish from a U.S. standpoint as well, adding strategic liabilities rather than military strengths. Russia strongly opposes missile defense bases in Central and Eastern Europe, but why should Washington subsidize the security of others? Moscow opposes an attack on Iran, and so should Americans. Russia backs the Assad regime in Syria, but the U.S. government once declared the same government to be “reformist.” Violent misadventures in Kosovo, Afghanistan, Iraq, and Libya demonstrate that America has little to gain and much to lose from another attempt at social engineering through war. If anything, the Putin government has done Washington a favor keeping the U.S. out of Syria. This doesn’t mean America should not confront Moscow when important differences arise. But treating Russia as an adversary risks encouraging it to act like one. Doing so especially will make Moscow more suspicious of America’s relationships with former members of the Warsaw Pact and republics of the Soviet Union. Naturally, Romney wants to “encourage democratic political and economic reform” in Russia — a fine idea in theory, but meddling in another country’s politics rarely works in practice. Just look at the Arab Spring. Not content with attempting to start a mini-Cold War, Mitt Romney dropped his nominal free-market stance to demonize Chinese currency practices. He complained about currency manipulation and forced technology transfers: “China seeks advantage through systematic exploitation of other economies.” On day one as president he promises to designate “China as the currency manipulator it is.” Moreover, he added, he would “take a holistic approach to addressing all of China’s abuses. That includes unilateral actions such as increased enforcement of U.S. trade laws, punitive measures targeting products and industries that rely on misappropriations of our intellectual property, reciprocity in government procurement, and countervailing duties against currency manipulation. It also includes multilateral actions to block technology transfers into China and to create a trading bloc open only for nations genuinely committed to free trade.” Romney’s apparent belief that Washington is “genuinely committed to free trade” is charming nonsense. The U.S. has practiced a weak dollar policy to increase exports. Washington long has subsidized American exports: the Export-Import Bank is known as “Boeing’s Bank” and U.S. agricultural export subsidies helped torpedo the Doha round of trade liberalization through the World Trade Organization. Of course, Beijing still does much to offend Washington. However, the U.S. must accommodate the rising power across the Pacific. Trying to keep China out of a new Asia-Pacific trade pact isn’t likely to work. America’s Asian allies want us to protect them — no surprise! — but are not interested in offending their nearby neighbor with a long memory. The best hope for moderating Chinese behavior is to tie it into a web of international institutions that provide substantial economic, political, and security benefits. Beijing already has good reason to be paranoid of the superpower which patrols bordering waters, engages in a policy that looks like containment, and talks of the possibility of war. Trying to isolate China economically would be taken as a direct challenge. Romney would prove Henry Kissinger’s dictum that even paranoids have enemies. Naturally, Romney also wants to “maintain appropriate military capabilities to discourage any aggressive or coercive behavior by China against its neighbors.” However, 67 years after the end of World War II, it is time for Beijing’s neighbors to arm themselves and cooperate with each other. Japan long had the second largest economy on earth. India is another rising power with reason to constrain China. South Korea has become a major power. Australia has initiated a significant military build-up. Many Southeast Asian nations are constructing submarines to help deter Chinese adventurism. Even Russia has much to fear from China, given the paucity of population in its vast eastern territory. But America’s foreign-defense dole discourages independence and self-help. The U.S. should step back as an off-shore balancer, encouraging its friends to do more and work together. It is not America’s job to risk Los Angeles for Tokyo, Seoul, or Taipei. Romney similarly insists on keeping the U.S. on the front lines against North Korea, even though all of its neighbors have far more at stake in a peaceful peninsula and are able to contain that impoverished wreck of a country. The Romney campaign proclaims: “Mitt Romney will commit to eliminating North Korea’s nuclear weapons and its nuclear-weapons infrastructure.” Alas, everything he proposes has been tried before, from tougher sanctions to tighter interdiction and pressure on China to isolate the North. What does he plan on doing when Pyongyang continues to develop nuclear weapons as it has done for the last 20 years? The American military should come home from Korea. Romney complained that the North’s nuclear capability “poses a direct threat to U.S. forces on the Korean Peninsula and elsewhere in East Asia.” Then withdraw them. Manpower-rich South Korea doesn’t need U.S. conventional support, and ground units do nothing to contain North Korea’s nuclear ambitions. Pull out American troops and eliminate North Korea’s primary threat to the U.S. Then support continuing non-proliferation efforts led by those nations with the most to fear from the North. That strategy, more than lobbying by Washington, is likely to bring China around. Romney confuses dreams with reality when criticizing President Obama over the administration’s response to the Arab Spring. “We’re facing an Arab Spring which is out of control in some respects,” he said, “because the president was not as strong as he needed to be in encouraging our friends to move toward representative forms of government.” Romney asked: “How can we try and improve the odds so what happens in Libya and what happens in Egypt and what happens in other places where the Arab Spring is in full bloom so that the developments are toward democracy, modernity and more representative forms of government? This we simply don’t know.” True, the president doesn’t know. But neither does Mitt Romney. The latter suffers from the delusion that bright Washington policymakers can remake the world. Invade another country, turn it into a Western-style democracy allied with America, and everyone will live happily every after. But George W. Bush, a member of Mitt Romney’s own party, failed miserably trying to do that in both Afghanistan and Iraq. The Arab Spring did not happen because of Washington policy but in spite of Washington policy. And Arabs demanding political freedom — which, unfortunately, is not the same as a liberal society — have not the slightest interest in what Barack Obama or Mitt Romney thinks. Yet the latter wants “convene a summit that brings together world leaders, donor organizations, and young leaders of groups that espouse” all the wonderful things that Americans do. Alas, does he really believe that such a gathering will stop, say, jihadist radicals from slaughtering Coptic Christians? Iraq’s large Christian community was destroyed even as the U.S. military occupied that country. His summit isn’t likely to be any more effective. Not everything in the world is about Washington. Which is why Romney’s demand to do something in Syria is so foolish. Until recently he wanted to work with the UN, call on the Syrian military to be nice, impose more sanctions, and “increase the possibility that the ruling minority Alawites will be able to reconcile with the majority Sunni population in a post-Assad Syria.” Snapping his fingers would be no less effective. Most recently he advocated arming the rebels. But he should be more cautious before advocating American intervention in another conflict in another land. Such efforts rarely have desirable results. Iraq was a catastrophe. Afghanistan looks to be a disaster once American troops come home. After more than a decade Bosnia and Kosovo are failures, still under allied supervision. Libya is looking bad. Even without U.S. “help,” a full-blown civil war already threatens in Syria. We only look through the glass darkly, observed the Apostle Paul. It might be best for Washington not to intervene in another Muslim land with so many others aflame. Despite his support for restoring America’s economic health, Romney wants to increase dramatically Washington’s already outsize military spending. Rather than make a case on what the U.S. needs, he has taken the typical liberal approach of setting an arbitrary number: 4 percent of GDP. It’s a dumb idea, since America already accounts for roughly half the globe’s military spending — far more if you include Washington’s wealthy allies — and spends more in real terms than at any time during the Cold War, Korean War, or Vietnam War, and real outlays have nearly doubled since 2000. By any normal measure, the U.S. possesses far more military resources than it needs to confront genuine threats. What Romney clearly wants is a military to fight multiple wars and garrison endless occupations, irrespective of cost. My Cato colleague Chris Preble figured that Romney's 4 percent gimmick would result in taxpayers spending more than twice as much on the Pentagon as in 2000 (111 percent higher, to be precise) and 45 percent more than in 1985, the height of the Reagan buildup. Over the next ten years, Romney's annual spending (in constant dollars) for the Pentagon would average 64 percent higher than annual post-Cold War budgets (1990-2012), and 42 percent more than the average during the Reagan era (1981-1989). If Mitt Romney really believes that the world today is so much more dangerous than during the Cold War, he should spell out the threat. He calls Islamic fundamentalism, the Arab Spring, the impact of failed states, the anti-American regimes of Cuba, Iran, North Korea, and Venezuela, rising China, and resurgent Russia “powerful forces.” It’s actually a pitiful list — Islamic terrorists have been weakened and don’t pose an existential threat, the Arab Spring threatens instability with little impact on America, it is easier to strike terrorists in failed states than in nominal allies like Pakistan and Saudi Arabia, one nuclear-armed submarine could vaporize all four hostile states, and Russia’s modest “resurgence” may threaten Georgia but not Europe or America. Only China deserves to be called “powerful,” but it remains a developing country surrounded by potential enemies with a military far behind that of the U.S. In fact, the greatest danger to America is the blowback that results from promiscuous intervention in conflicts not our own. Romney imagines a massive bootstrap operation: he wants a big military to engage in social engineering abroad which would require an even larger military to handle the violence and chaos that would result from his failed attempts at social engineering. Better not to start this vicious cycle. America faces international challenges but nevertheless enjoys unparalleled dominance. U.S. power is buttressed by the fact that Washington is allied with every industrialized nation except China and Russia. America shares significant interests with India, the second major emerging power; is seen as a counterweight by a gaggle of Asian states worried about Chinese expansion; remains the dominant player in Latin America; and is closely linked to most of the Middle East’s most important countries, such as Israel, Saudi Arabia, Egypt, Jordan, and Iraq. If Mitt Romney really believes that America is at greater risk today than during the Cold War, he is not qualified to be president. In this world the U.S. need not confront every threat, subsidize every ally, rebuild every failed state, and resolve every problem. Being a superpower means having many interests but few vital ones warranting war. Being a bankrupt superpower means exhibiting judgment and exercising discretion. President Barack Obama has been a disappointment, amounting in foreign policy to George W. Bush-lite. But Mitt Romney sounds even worse. His rhetoric suggests a return to the worst of the Bush administration. The 2012 election likely will be decided on economics, but foreign policy will prove to be equally important in the long-term. America can ill afford another know-nothing president.

### 1nc ITER advantage

1. Zero internal link – MSU doesn’t have a card that says either the EU or the US is going to pull out of ITER –

a. their **Pero** evidence actually says the opposite, and is not even about the US

b. their **Hand** evidence just says some US scientists will try to kill ITER funding in Congress, not that they’ll be successful – it’s talking about changing their stance in testimony only

#### 2. EU support is rock-solid – they would cut other programs before cutting ITER

**Davenport, 12** (Claire, “EU to divert research funds to nuclear fusion project-sources” Reuters, <http://www.reuters.com/article/2012/04/13/eu-research-idUSL6E8FC6W620120413>)

The cash-strapped European Union may divert spending for information technology research next year to help fund a costly nuclear fusion project, EU officials and lobbyists said.

Critics of the plans, which are set to be finalised later this month, said they risked undermining the bloc's push for economic growth and job creation as a route out of the financial crisis.

The cuts to the European Commission's funds for technological research in 2013 "could be as much as 150 million," John Higgins, director general of the EU's biggest IT lobby Digital Europe, said.

The official in charge of the EU's digital policies hinted at plans to cut research funding during a speech in Rome earlier this week.

"The rumour that is going around - and that is awful - is to cut (spending) in ICT research and technology, research and innovation. And that is like not giving water to plants," said Neelie Kroes, EU Commissioner for the Digital Agenda.

According to an internal document seen by Reuters, Kroes believes that half her research budget - roughly 140 million euros - may be sacrificed to help fill a 360 million-euro funding gap for a global nuclear fusion reactor project based in France called the International Thermonuclear Experimental Reactor (ITER).

The EU's 27 countries agreed in February that the Commission should redirect funding from other policy areas in the EU budget to make up the shortfall in ITER spending.

The spokesperson for the EU's budget commissioner, Janusz Lewandowski, said no budget cuts had been officially agreed yet.

#### Foreign political support for ITER collaboration is already high

**Shrivastav, 12** ( Work on track for world's first fusion reactor Snehlata Shrivastav, TNN Feb 3, 2012, <http://articles.timesofindia.indiatimes.com/2012-02-03/nagpur/31021067_1_fusion-reactor-international-thermonuclear-experimental-reactor-plasma-research>)

India, one of the seven participating countries, is keeping pace with the development work assigned to it as part of the joint project to produce energy from fusion, using deuterium and tritium, the two hydrogen isotopes, as fuel at the International Thermonuclear Experimental Reactor (ITER), said project director of India-ITER Shishir Deshpande.

The reactor is expected to be ready by 2022 while 500MW power generation could take another decade. India was the last to join the experiment, the first of its kind effort, on the initiative of Anil Kakodkar, former Atomic Energy Commission chairman. Deshpande, from the Institute of Plasma Research, Gandhinagar, Gujarat, is ensuring that Indian scientists and industry deliver their work on time. The entire project is expected to cost about 13 billion Euro.

Speaking to TOI on the ambitious project, Deshpande said designing work on 'cryostat', the world's largest high vacuum cold storage vessel for the reactor, which India is making, has already been completed and procurement process has started. Deshpande, a Nagpur University (NU) alumnus from the physics department, was speaking to TOI while in the city to deliver the VN Thatte memorial lecture at Institute of Science on Thursday and NU physics department.

The ITER project coming up at Cadarache, France, would house a fusion reactor as big as a ten-storeyed building. It will try to fuse together two atoms as against fission, where atoms divide to create energy. The Tokamak, a device that houses the magnetic fields to contain the plasma (fourth state of matter similar to that present in the Sun) will also be one of the biggest and best Tokamaks.

"We are basically involved in designing and fabricating 7-8 major components of the reactor and developing certain diagnostic tools. India would begin delivering them by 2016. The work on other components are in prototyping or designing stage," said Deshpande.

Though the pre-project work on ITER began in 2005, the seven participating countries; European Union (EU), Russia, USA, China, Japan, South Korea and India, actually signed a joint agreement in November 2006, and a body called as ITER organization was formally constituted in 2007. The Indian government formally cleared the project and formed a special board in 2007. The construction work of the first building was started in 2010.

EU is contributing the biggest share (45%) in the project, which is expected to cost over 13-15 billion Euro (about Rs 78,000 crore) while the other six partners are contributing about 9% each, mostly in kind. Professor Osamu Motojima from Japan is the project's director general.

#### Status quo cuts don’t eliminate domestic fusion support – a balanced program remains

**Brinkman, 12 -** Director, Office of Science U.S. Department of Energy (William, CQ Congressional Testimony, 3/20, lexis)

The Fusion Energy Sciences program request reflects the continued U.S. commitment to the scientific mission of ITER, while maintaining a balanced research portfolio across the program. The ITER experiment aims to produce the world's first "burning plasma," in which thermonuclear reactions will produce net energy for the first time (with a projected amplification factor of ten).

The funding increase of $45 million for the U.S. contributions to the ITER Project bring the FY 2013 request to $150 million and will enable the U.S. to make long-lead procurements as the project enters its construction period. Eighty percent of U.S. ITER funding is spent in the United States. The majority of our ITER obligations are "in-kind," with components designed and built in the U.S. before being shipped to France for final assembly into the ITER apparatus. The continued long-term success of the U.S. fusion science efforts also depends on maintaining a healthy domestic fusion program. The FY 2013 budget seeks to balance these competing priorities in the context of constrained budgets. Domestic research in most areas is reduced, while program balance is retained. The FY 2013 budget request ceases operations at the Alcator C-Mod tokamak facility at the Massachusetts Institute of Technology. Remaining investments still enable support for a broad program in fusion and plasma science research that will be highly impactful and maintain a vibrant U.S. workforce through, among other means, international partnerships.

#### ITERs being funded now but the budgets tight -- the plan forces a tradeoff.

Cunningham, 8-15-12

[Nicholas, American Security Project, “Fusion Budget on Hold’,” http://americansecurityproject.org/blog/2012/fusion-budget-on-hold/]

The European Union is financing 45% of the total cost of ITER, with six other nations (one of which is the United States) chipping in 9% each. That means that the ITER bill for the U.S. totals a relatively modest $2.8 billion spread over 10 years. However, U.S. funding for both ITER and the American domestic fusion program comes out of the same pie, pitting the two against each other. Congressional efforts to cut government spending have put appropriators in a bind. In order to meet its international commitments, President Obama has proposed to take $45 million out of the domestic program (a 16% cut), and reallocate that money to ITER. The cut to the domestic program would essentially shut down MIT’s Alcator C-MOD fusion project, a facility that is researching smaller and cheaper ways of doing fusion. Scrapping the MIT program would be a huge setback. The Senate is going along with the President’s budget, appropriating $398 million for the Office of Fusion Energy Sciences, the office through which fusion labs get their funding. The House on the other hand, balked at the President’s request. Instead, it increased funding to $475 million. The two appropriations bills have not been reconciled. Fusion Power Associates has a good explanation of the details here. Realistically, fusion funding is a sideshow compared to other budget fights in Congress, so the fusion program is hostage to the political season. House Speaker John Boehner reached an agreement with Senate Majority Leader Harry Reid to pass a six-month continuing resolution when Congress returns in September. The six-month continuing resolution will mean that fusion funding remains unchanged from FY12 levels (no cuts), at least through early next year. So, while the fusion program has been spared for a few months, the budget fight will resume in early 2013.

### 1nc STEM

#### Non-unique and alt causes in the status quo – your author

**Bender, ’10** National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)//CC

“Many of these skills and facilities cannot be found in universities, other government laboratories, or in the US industry today,’’ the American Physical Society concluded last month. A key element in recruiting a new generation of weapons scientists, officials said, will be debunking the perception that the career field is primarily about building bigger and better weapons of mass destruction. “We spend most of our time making sure things don’t explode,’’ D’Agostino said.

#### Verification reduces confidence – your author

**Bender, ’10** National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)//CC

U.S. experience shows that, even with full access and disclosure, it is often difficult to accurately account for all materials produced. This fact will need to be taken into account to ensure that a procedure designed to increase confidence does not inadvertently reduce it. One goal might be to have various states provide national data in order to establish an acceptable international range for “Material Unaccounted For.”

#### Status quo blocks use – demo key – your author

**Davis, ’10** National Security Fellow – Center for Global Security Research, Founding Director – Defense Threat Reduction Agency of the United States Department of Defense, and Chair – American Physical Society Panel on Public Affairs, et al. (Jay Davis, February 2010, “Technical Steps to Support Nuclear Arsenal Downsizing,” http://www.aps.org/policy/reports/popa-reports/upload/nucleardownsizing.PDF)//CC

The fundamental techniques of nuclear archeology, while well established, 8 have not, to date, been applied rigorously to the validation of materials declarations. It is our opinion that an R&D effort connected to demonstration projects with U.S. and Russian reactors and enrichment facilities can provide the necessary foundation for incorporating this technique into future reduction initiatives.

#### Fails – records not identified in the status quo

**Evans and Kawaguchi, ‘9** co-chairs of the INTERNATIONAL COMMISSION ON NUCLEAR NON-PROLIFERATION AND DISARMAMENT (Gareth Evans and Yoriko Kawaguchi, 2009, “Eliminating Nuclear Threats: A Practical Agenda for Global Policymakers,” http://www.icnnd.org/reference/reports/ent/part-iv-17.html)//CC

Nuclear archaeology. As multilateral nuclear disarmament progresses, at some point it will be essential to provide confidence that states do not retain undeclared nuclear weapons or fissile material. This will require verification measures aimed at assuring that states’ declarations of fissile holdings are complete, i.e. that nothing has been withheld. The verification process will need to include establishing baselines of historic fissile material production and subsequent transactions, against which declarations of current holdings can be evaluated. Establishing these baselines – an exercise that might be termed “nuclear archaeology” – will involve major challenges. It will be necessary for the verifiers to review records, undertake measurements and analyses of nuclear materials and related materials and wastes, and possibly interview personnel. 17.26 The point, for present purposes, is that in order to facilitate this future verification process, the necessary practical steps have to start being taken now: to ensure that all relevant records are identified, secured and preserved; to clarify records that appear incomplete or inconclusive with personnel familiar with the operations concerned; and where relevant – e.g. in the treatment of wastes, and dismantling of facilities – to ensure that relevant measurements and samples are taken. The key here is for the states concerned to recognize they have a mutual interest in ensuring that future verification is able to provide credible results.

#### Nuclear intelligence fails – actionable intelligence can’t be translated into practice effectively

**Sokolski, 11** [What Nuclear Power’s Revival Will Now Require: Tightening the Rules Testimony of Henry Sokolski Executive Director The Nonproliferation Policy Education Center Washington, DC, March 17, 2011 Room 2172 Rayburn House Office Building Washington, DC, <http://foreignaffairs.house.gov/112/sok031711.pdf>]

Nuclear Inspections and Intelligence: What Are the Limits? This is where the idea of strengthening existing nuclear inspections and enhancing national intelligence are generally held up as nonproliferation solutions. In the case of IAEA inspections, much can be done to improve near-real time surveillance of inspected sites with remote sensors and secure communication links. Securing talented inspectors and retaining more of them would also be both possible and useful. 15. See Committee on Review of DOE's Nuclear Energy Research and Development Program, National Research Council, ―Minority Opinion: Dissenting State of Gilinsky and Macfarlane,‖ in Review of DOE's Nuclear Energy Research and Development Program (Washington, DC: National Academies Press, 2008), available at http://armscontrolcenter.org/assets/pdfs/macfarlane\_gilinsky.pdf and Frank Von Hippel, ―Managing Spent Fuel in the United States: The Illogic of Reprocessing,‖ in Henry Sokolski editor, Falling Behind: International Scrutiny of the Peaceful Atom (Carlisle, PA: Strategic Studies Institute, 2008), pp. 159-221. 16. On the matter of the NPT and the right to peaceful nuclear energy, 11 Yet, simply sending money to the IAEA and increasing its authority ought not to be seen as a panacea. Most U.S. officials, for example, are extremely enthusiastic about increasing the number of state adherents to the IAEA‘s latest inspection understanding, The Additional Protocol, which authorizes the IAEA to conduct more intrusive inspections than under existing safeguards agreements. The increased inspection authority that the Additional Protocol affords, though, is most commonly occasioned by a reduction in the number of routine inspections. Once a country qualifies for Additional Protocol inspections, it is argued, it should be trusted more and inspected less. This lessens IAEA inspection loads but it also reduces IAEA safeguards presence on the ground. There also are real limits on IAEA inspections. After Iran, Iraq, Libya, Syria, and Algeria, we learned that in the most dangerous cases, the IAEA cannot always meet its own timeliness nuclear detection goals. Safeguarding nuclear fuel making (e.g., enrichment, reprocessing, fuel fabrication, uranium hexafluoride production) and nuclear weapons usable fuels (highly enriched uranium, separated plutonium, mixed oxide fuel) anywhere; and large civilian nuclear facilities in hostile states (e.g., Iran and North Korea), are among these cases. In these instances, the inspected nuclear activities and materials are so close to bomb making that there is scant time even with discovery of a diversion to do much and a high likelihood that any discovery might come after the diversion if at all.17 Finally, recent research suggests that for large organizations with conflicting goals regarding the regulation of complex technologies, their mere expansion may not help and, in certain cases, could actually make matters worse. These research findings could easily apply to the IAEA, which is designed both to promote civilian nuclear applications and to restrain them to assure they stay peaceful. These two opposing IAEA functions make achieving the agency‘s safeguarding mission difficult. It also makes determining how much one is ―strengthening‖ the IAEA inherently tricky.18 This, then, brings us to the utility of improving national intelligence capabilities. Since the late l980s, much has been made of what the U.S. and other states might do to ―counter‖ proliferation with trade interdictions, covert operations, passing off sensitive information to agencies like the IAEA and, if necessary, military strikes. All of these operations may be needed; all demand timely, actionable intelligence. To argue that we can depend on such operations to prevent proliferation if we only could secure more ―actionable‖ intelligence, though, would be a stretch. First, there are severe limits on how much actionable intelligence any country is comfortable sharing with allies, much less international organizations. Second, there are limits on how much information most governments, including our own, are likely to demand about states that are about to or may have already acquired nuclear weapons. In more than a few cases, getting or sharing such information becomes awkward since it can force officials to have to act in ways they may be disinclined to. This arguably was the case with Israel, Pakistan, and North Korea, where at various points, senior U.S. officials actually kept intelligence officers from inspecting or reporting more on what actually was occurring in each of these countries nuclear weapons programs. We subsequently have had to downplay the implications of nonproliferation failures in each of these cases. This suggests that our problem in preventing proliferation may not be the lack of actionable intelligence so much as a lack of demand for it in the hardest and, arguably, most important cases.19

**Won’t happen – too expensive and controversial**

**Tepperman 09** - former Deputy Managing Ed. Foreig Affairs and Assistant Managing Ed. Newsweek (Jonathon, Newsweek, “Why Obama should Learn to Love the Bomb”, 44:154, 9-7)

The risk of an arms race--with, say, other Persian Gulf states rushing to build a bomb after Iran got one--is a bit harder to dispel. Once again, however, history is instructive. "In 64 years, the most nuclear-weapons states we've ever had is 12," says Waltz. "Now with North Korea we're at nine. That's not proliferation; **that's spread at glacial pace**." Nuclear weapons are so controversial and expensive that only countries that deem them absolutely critical to their survival go through the extreme trouble of acquiring them. That's why South Africa, Ukraine, Belarus, and Kazakhstan voluntarily gave theirs up in the early '90s, and why other countries like Brazil and Argentina dropped nascent programs. This doesn't guarantee that one or more of Iran's neighbors--Egypt or Saudi Arabia, say--might not still go for the bomb if Iran manages to build one. But the risks of a rapid spread are low, especially given Secretary of State Hillary Clinton's recent suggestion that the United States would extend a nuclear umbrella over the region, as Washington has over South Korea and Japan, if Iran does complete a bomb. If one or two Gulf states nonetheless decided to pursue their own weapon, that still might not be so disastrous, given the way that bombs tend to mellow behavior.

**No China war**

Robert J. Art, Fall 2010 Christian A. Herter Professor of International Relations at Brandeis University and Director of MIT's Seminar XXI Program The United States and the rise of China: implications for the long haul Political Science Quarterly 125.3 (Fall 2010): p359(33)

The workings of these three factors should make us cautiously optimistic about keeping Sino-American relations on the peaceful rather than the warlike track. The peaceful track does not, by any means, imply the absence of political and economic conflicts in Sino-American relations, nor does it foreclose coercive diplomatic gambits by each against the other. What it does mean is that the conditions are in place for war to be a low-probability event, if policymakers are smart in both states (see below), and that an all-out war is nearly impossible to imagine. By the historical standards of recent dominant-rising state dyads, this is no mean feat. In sum, there will be some security dilemma dynamics at work in the U.S.-China relationship, both over Taiwan and over maritime supremacy in East Asia, should China decide eventually to contest America's maritime hegemony, and there will certainly be political and military conflicts, but nuclear weapons should work to mute their severity because the security of each state's homeland will never be in doubt as long as each maintains a second-strike capability vis-a-vis the other. If two states cannot conquer one another, then the character of their relation and their competition changes dramatically. These three benchmarks--China's ambitions will grow as its power grows; the United States cannot successfully wage economic warfare against a China that pursues a smart reassurance (peaceful rise) strategy; and Sino-American relations are not doomed to follow recent past rising-dominant power dyads--are the starting points from which to analyze America's interests in East Asia. I now turn to these interests.

### 1NC Fusion Development

#### Spinoffs take decades

**Rothwell, ’97** (Jed Rothwell, Infinite Energy, March-June 1997, “Cold Fusion and the Future,” <http://www.infinite-energy.com/iemagazine/issue1314/future.html>, Iss. 13-14)//CC

Cold fusion spin-off like indoor farming, desalination, and aerospace engines will take decades to develop. They will require massive investment, new factories, and years of research. Cold fusion itself will take time to perfect, but the spin-offs will take longer because they are more complex, and because large scale research on them will not begin until cold fusion is commercialized. Indoor farming with robots might take 30 to 60 years to develop. It is cost effective for some crops already: flowers in the Netherlands, tomatoes in Tokyo, aquaculture in Boston. But it will be a long time, if ever, before we grow wheat more cheaply indoors than on the Great Plains. The change to automated indoor farming will occur gradually, giving displaced farm workers time to find new jobs. The energy production industries ­ oil, gas, coal, and the electric power companies ­ are another matter. The potential for chaotic disruption here is very great, because the transition will be swift and it will be in one direction only. All jobs will be lost, none will be created.

#### Even if they can prove individual components necessary for fusion are possible – they can’t do all of the necessary processes at once – incentives can’t change science

Jeff Hect (writer for the New Scientist) October 2, 2012 “World's largest laser misses nuclear fusion deadline “ http://www.newscientist.com/article/dn22325-worlds-largest-laser-misses-nuclear-fusion-deadline.html

Bad news for star power. The world's largest laser has missed a deadline that was key to its goal of producing safe, clean energy via nuclear fusion, the same process that powers the sun. The 192-beam laser forms the heart of the US National Ignition Facility at Lawrence Livermore National Laboratory in California, the world's leading laboratory for laser fusion research. But the lab has still not succeeded in creating a nuclear fusion reaction that makes more energy than it consumes, a milestone known as ignition. The US Congress, which funds NIF, had said the lab must do so by 30 September. In nuclear fusion, hydrogen nuclei are squeezed together to form helium nuclei, releasing huge amounts of energy. The hope is that fusion might one day replace uranium-based fission reactors as a cleaner source of nuclear power, but no controlled fusion reaction on Earth has ever hit the ignition point. Magnetic confinement fusion – using magnetic fields to confine a plasma at the pressures needed to achieve fusion – is generally considered the most advanced technique. That is what is used in the experimental Joint European Torus (JET) in Culham, UK, and the test reactor ITER, under construction in Cadarache, France. Pulsed implosion By contrast, NIF creates fusion reactions by imploding tiny balls of frozen hydrogen using pulses from its giant laser. The resulting pressure squeezes the hydrogen atoms for a few billionths of second and they fuse to form helium, releasing energy. NIF's push to meet the congressional deadline represented an ambitious attempt to pip magnetic confinement fusion to the post, but that looks unlikely now. Though computer models predicted that NIF was on track to create fusion reactions

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that produce more energy than they consume,a this has turned out not to be case. The key problem seems to be achieving the required pressure of 300 gigabars (300 billion atmospheres). "We've reached 150 to 200 gigabars in implosions, but that's still off by a factor of 2-ish," Ed Moses, Lawrence Livermore's principal associate director for NIF and photon sciences, told New Scientist. Achieving the required pressure requires four things: an implosion velocity of 370 kilometres per second, creating a perfectly spherical hot spot at the centre of the imploded hydrogen pellets, mixing the plasma properly once it has formed, and very even compression. "We can do all of these things. The trouble is that we can't do them all at once," says Moses. "Like squeezing on a balloon, something might pop out.

#### No aging crisis – current immigration rates and high fertility solve

**Howe and Jackson 9** - Researchers at the Center for Strategic and International Studies and co-authors of "The Graying of the Great Powers: Demography and Geopolitics in the 21st Century.", “ (Neil and Richard, The World Won't Be Aging Gracefully. Just the Opposite.”, Washington Post, Jan 4, <http://www.washingtonpost.com/wp-dyn/content/article/2009/01/02/AR2009010202231.html>)

An important but limited exception to hyperaging is the United States. Yes, America is also graying, but to a lesser extent. We are the only developed nation with replacement-rate fertility (2.1 children per couple). By 2030, our median age, now 36, will rise to only 39. Our working-age population, according to both U.N. and census projections, will continue to grow throughout the 21st century because of our higher fertility rate and substantial immigration -- which we assimilate better than most other developed countries. By 2015, for the first time ever, the majority of developed-world citizens will live in English-speaking countries.

#### No impact to the environment

**Boucher 98** (Doug, "Not with a Bang but a Whimper," Science and Society, Fall, http://www.driftline.org/cgi-bin/archive/archive\_msg.cgi?file=spoon-archives/marxism-international.archive/marxism-international\_1998/marxism-international.9802&msgnum=379&start=32091&end=32412)

The political danger of catastrophism is matched by the weakness of its scientific foundation. Given the prevalence of the idea that the entire biosphere will soon collapse, it is remarkable how few good examples ecology can provide of this happening m even on the scale of an ecosystem, let alone a continent or the whole planet. Hundreds of ecological transformations, due to introductions of alien species, pollution, overexploitation, climate change and even collisions with asteroids, have been documented. They often change the functioning of ecosystems, and the abundance and diversity of their animals and plants, in dramatic ways. The effects on human society can be far-reaching, and often extremely negative for the majority of the population. But one feature has been a constant, nearly everywhere on earth: life goes on. Humans have been able to drive thousands of species to extinction, severely impoverish the soil, alter weather patterns, dramatically lower the biodiversity

of natural communities, and incidentally cause great suffering for their posterity. They have not generally been able to prevent nature from growing back. As ecosystems are transformed, species are eliminated -- but opportunities are created for new ones. The natural world is changed, but never totally destroyed. Levins and Lewontin put it well: "The warning not to destroy the environment is empty: environment, like matter, cannot be created or destroyed. What we can do is replace environments we value by those we do not like" (Levins and Lewontin, 1994). Indeed, from a human point of view the most impressive feature of recorded history is that human societies have continued to grow and develop, despite all the terrible things they have done to the earth. Examples of the collapse of civilizations due to their over- exploitation of nature are few and far between. Most tend to be well in the past and poorly documented, and further investigation often shows that the reasons for collapse were fundamentally political.

**Extinction impossible and ahistorical**

**Posner 5** (Richard A., Judge U.S. Court of Appeals 7th Circuit, Professor Chicago School of Law, January 1, 2005, Skeptic, Altadena, CA, Catastrophe: Risk and Response, http://goliath.ecnext.com/coms2/gi\_0199-4150331/Catastrophe-the-dozen-most-significant.html#abstract)

Yet the fact that Homo sapiens has managed to survive every disease to assail it in the 200,000 years or so of its existence is a source of genuine comfort, at least if the focus is on extinction events. There have been enormously destructive plagues, such as the Black Death, smallpox, and now AIDS, but **none has come close** to destroying the entire human race. There is a biological reason. Natural selection favors germs of **limited lethality**; they are fitter in an evolutionary sense because their genes are more likely to be spread if the germs do not kill their hosts too quickly. The AIDS virus is an example of a lethal virus, wholly natural, that by lying dormant yet infectious in its host for years maximizes its spread. Yet there is no danger that AIDS will destroy the entire human race. The likelihood of a natural pandemic that would cause the extinction of the human race is probably even less today than in the past (except in prehistoric times, when people lived in small, scattered bands, which would have limited the spread of disease), despite wider human contacts that make it more difficult to localize an infectious disease. The reason is improvements in medical science. But the comfort is a small one. Pandemics can still impose enormous losses and resist prevention and cure: the lesson of the AIDS pandemic. And there is always a lust time. That the human race has not yet been destroyed by germs created or made more lethal by modern science, as distinct from completely natural disease agents such as the flu and AIDS viruses, is even less reassuring. We haven't had these products long enough to be able to infer survivability from our experience with them. A recent study suggests that as immunity to smallpox declines because people am no longer being vaccinated against it, monkeypox may evolve into "a successful human pathogen," (9) yet one that vaccination against smallpox would provide at least some protection against; and even before the discovery of the smallpox vaccine, smallpox did not wipe out the human race. What is new is the possibility that science, bypassing evolution, will enable monkeypox to be "juiced up" through gene splicing into a far more lethal pathogen than smallpox ever was.

#### The grey goo theory is literally fiction

**Ball 2003** (Philip Ball, a science writer and a consultant editor of Nature (“Nanotechnology Science's Next Frontier or Just a Load of Bull?” New Statesman, June 23, Questia)

Such concerns say more about human nature than about nanotechnology. These fears loom large not because we are terrified, but because we are fascinated by them. Any nanotech researcher will tell you that assessing the prospects of this field on the basis of grey goo is like basing predictions of the impact of space travel on Star Trek. No one has the faintest idea how to make a replicating nanobot. "The nearest we can get to a self-replicating machine such as a mosquito is a helicopter," says Kroto--that is, big, cumbersome and not self-replicatingat all. The assembly-line approach to nanotechnology on which Drexler's grey goo idea was based, in which nanoscale robotic arms pick up and manipulate molecular fragments like so many factory components, is sheer fiction. Even Drexler no longer rates grey goo as an important concern for nanotechnology.

## 2nc funding shift cp

### 2nc CP solvency

#### The CP addresses all current risks in the current fusion program – diversifying the research program away from an exclusive focus on short-pulse tokamaks and ITER to turn tokamaks into a stellerator program solves

**Wurden, 12** - LANL Fusion Energy Sciences Program Manager(Glen, “Risk Reduction” <http://fire.pppl.gov/Wurden%20White%20Paper-2.pdf>)

Germany has a major investment in alternates. Japan has a major investment in alternates. China has many parallel approaches under development. We should not be left with a program that is effectively ITER and nothing else. We should not plan a program without significant risk reduction efforts. And I mean, risk reduction approaches that are as orthogonal to the tokamak as possible, in key areas that are known to be tokamak weaknesses. Our program can be a world leader in alternates, once again.

What does this mean for the US Fusion Energy Sciences program in the next 5‐10 years?

1). We should expand the stellarator program in the USA. One of the three tokamak facilities should be given the opportunity to make a systematic transition towards a mid‐sized stellarator (instead of their present tokamak), as a result of a directed competition. This would be the next new US machine.

2). We should restart reactor design modeling efforts, that really look at simultaneous issues of RAMI,

blanket replacement, complexity/simplicity, and tritium breeding (not just hypothetical, but can you

really get the ratios you need in the presence of other demands on actual in‐ vessel real estate).

3). I suggest a reasonable split of resources is 30% on ITER, 30% on tokamak (which includes ST and AT

R&D), and 30% on alternates. The other 10% can go to basic plasma science and HEDLP, which

unfortunately aren’t being discussed here today.

#### A shift to stellerators solves – boosts leadership, international collaboration and spinoffs – and maximizes the area of fusion research where the US can best demonstrate capability

**Neilson, 12** - Princeton Plasma Physics Laboratory (Hutch, “A Leadership-Class U.S. Domestic Stellarator Program” <http://fire.pppl.gov/FESAC_WP_Stellarator_PPPL.pdf>)

The benefits of stellarators and the motivation for stellarator research have been extensively

documented and reviewed, and are widely understood and accepted. The U.S. has long been a

leader in the field, with contributions that include:

• Fundamental theoretical discoveries about the properties of 3D magnetic configurations

and how they can be manipulated to control the physics properties of a toroidal plasma.

• 3D equilibrium codes that today are at the heart of numerous 3D design and analysis tools,

used the world over for both tokamaks and stellarators.

• Development of quasi-symmetric (QS) stellarators, an innovation that manifests the

traditional stellarator advantages of steady-state without current drive or disruptions in a

low-ripple, low flow-damping, reduced aspect-ratio configuration.

The QS stellarator offers solutions that can mitigate major risks to the successful development of

a steady-state MFE system. The concept is sufficiently different from other toroidal concepts as

to offer high potential for breakthroughs and new science, yet its design and performance

projections have their basis in well-understood physics of stellarators and tokamaks. The

importance of and international interest in QS stellarators internationally remains high, but no

other countries are in a position to pursue the concept, either because they have existing

commitments to the other important stellarator concepts or because they lack the core

capabilities for it. U.S. leadership in QS stellarators is both a necessity and an opportunity.

The U.S. is maintaining its involvement in stellarator research through collaborations with LHD

in Japan and Wendelstein 7-X (W7-X) in Germany, in addition to concept-exploration

experiments at U.S. universities. Recently China, motivated by an appreciation of stellarator

advantages for their fusion program, has approached the U.S. to discuss a range of collaboration

possibilities. Our attractiveness as a partner is based on our core stellarator physics and

engineering capabilities, a product of DOE investment in stellarator research over many years.

We can remain active participants in stellarators, and can even lead experiments, through our

flourishing international collaborations. However, U.S. leadership in stellarators requires a

**domestic program to pursue U.S. innovations** targeted to materially improve the prospects for

fusion and which no one else can lead.

#### This can be achieved by reprioritizing the domestic research program – it can occur without an increase in fusion research

**Neilson, 12** - Princeton Plasma Physics Laboratory (Hutch, “A Leadership-Class U.S. Domestic Stellarator Program” <http://fire.pppl.gov/FESAC_WP_Stellarator_PPPL.pdf>)

Q: Can we afford it under flat budget constraints? A: Indeed the proposed program would require

significant budgets on several FES budget lines, growing over the next few years by, for

example, ~$50M in major facilities, ~$5M in theory and computation, and ~$5M in international

collaboration. Within a flat domestic MFE budget, it would obviously require significant shifts in

priorities and redirection of work affecting multiple institutions and individuals. Whether we are

capable of such a shift is not in doubt. We are much better positioned than China and Korea

were 15 years ago, before they grew world-class fusion programs starting from practically

nothing. Most U.S. stellarator researchers today came from backgrounds in tokamak research,

and the W7-X research team will necessarily be staffed mostly by people with little or no prior

stellarator experience. U.S. researchers and institutions are versatile enough to adapt their talents

and technical capabilities to new challenges.

Q: Why not wait for W7-X or for growth in the overall U.S. fusion budget? A: One can make

that choice, but it amounts to a decision to forego a clear opportunity that exists now to assert

international leadership and follow a path with potential for breakthroughs and quantum

improvements in the vision for magnetic fusion energy systems.

#### A stellarator program solves and they can’t win offense because US ITER funding will sustain tokamak research. Stellerators create a credible alternative form of magnetic confinement and maximize US leadership – and they are more likely to be commercialized – which means it solves their fusion advantage better

**Weitzner, 12** - Professor of Mathematics Courant Institute of Mathematical Sciences New York University (Harold, “The Need for a National Stellarator Program” <http://fire.pppl.gov/FESAC_WP_Stellarator_Weitzner.pdf>)

A national stellarator program should be an integral part of the U.S. magnetic fusion program. The stellarator program should be at least as large as it is at present, and preferably larger. The arguments in favor of stellarator research are easily stated, clear, and generally accepted. As a candidate fusion device stellarators are a credible alternative to tokamaks, with significant advantages, as well as difficult issues, in comparison with the leader. Outside the U.S., stellarators are on a slow, but steady, development path, complementing the main line efforts. It can be, and has been, argued that stellarator development could be deferred until any serious limitations of the tokamak line are identified. Even without consideration of the important contributions made by stellarator work in support of the tokamak line, the policy of deferring stellarator development is unwise. Even if ITER achieves all its goals, the need to maintain currents in a tokamak for extremely long pulses could render the tokamak concept difficult to translate into an economically sensible power source. Additionally, one must recognize that in any research project there is a possibility of not reaching one’s goals. In either case, one should have available a credible alternative to the main line activity. One should not wait additional decades to offer an alternative. These ideas are well recognized outside the U.S., and our program should also be an active participant in furthering this part of world fusion development.

## 2nc ITER

### OV

#### Committed ITER participation is necessary to solve the case -- backing out crushes leadership and domestic fusion research.

Jones, ‘7

[Richard M., Media and Government Relations Division -- American Institute for Physics, 1-8, “Letter Seeks U.S. Funding for ITER,” http://www.aip.org/fyi/2008/004.html]

An unexpected outcome in the FY 2008 Consolidated Appropriations Act was the appropriators' decision to provide no money for the U.S. contribution to ITER. In addition, the Explanatory Statement directed that "Funding may not be reprogrammed from other activities within Fusion Energy Sciences to restore the U.S. contribution to ITER." The Administration requested $160.0 million. As reported in FYI #2, appropriators provided "$10,724,000 for Enabling R&D for ITER." Twenty leaders in the U.S. fusion community have sent a letter to OSTP Director John Marburger, Energy Secretary Samuel Bodman, Senate Energy and Water Development Appropriations Subcommittee Chairman Byron Dorgan (D-ND), and House Energy and Water Development Appropriations Subcommittee Chairman Peter Visclosky (D-IN). (Visclosky and Dorgan have jurisdiction over funding for the Office of Science.) "We most respectfully urge that funding be provided for continued U.S. participation in ITER," the letter states, continuing, "We also ask that funding be restored to the other areas of the Department of Energy's Office of Science." The Administration sends its FY 2009 budget to Congress on February 4. Senior Department of Energy officials will describe their request that day, and may comment on the FY 2008 outcome. Copies of this letter were also sent to Energy Under Secretary for Science Raymond Orbach, and the leadership and members of relevant House and Senate appropriations and authorization committees. The full text of the January 4 letter follows: "Dear Dr. Marburger, Secretary Bodman, Chairman Dorgan and Chairman Visclosky: "Despite being fully funded in the President’s and in the House and Senate Appropriations measures, the Fiscal Year 2008 omnibus funding measure contains $0 for the U.S. contribution to the ITER Project. ITER is the key breakthrough project for magnetic fusion energy. The purpose of the ITER Project is to 'demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes.' If the United States cannot participate in ITER, the U.S. will lose a centerpiece of its own fusion program, a key scientific tool for understanding a fundamental process in the universe (burning plasmas like those in the sun and stars) and the pathway to the future of fusion energy. "ITER is a joint project of the China, the European Union, India, Japan, Korea, Russia and the United States. Congress authorized U.S. participation in this project in the Energy Policy Act of 2005 and the President committed the United States to its approximately 10% share of the ITER construction just a few months ago. Failure by the United States to sustain its international commitments to ITER seems certain to establish the United States as an unreliable partner not only in the ITER project, but in many other areas of science. This comes at a time when the expense and scope of many critically important scientific activities suggest international partnership and cooperation. "Therefore, for the sake of the international and domestic fusion effort and for the sake of the U.S. reputation in the international scientific community, we most respectfully urge that funding be provided for continued U.S. participation in ITER.

#### Maintaining ITER funding is critical to US science leadership -- cuts alienate allies and undermine credibility.

Colestock et al., ‘8

[Patrick L., Los Alamos National Laboratory, Roger D. Bengtson, University of Texas at Austin, James E. Brau, University of Oregon, Cary B. Forest, University of Wisconsin, Stephen Holmes, Fermi National Accelerator Laboratory, George J. Morales, University of California at Los Angeles, Thomas M. O’Neil, University of California at San Diego, Tony S. Taylor, General Atomics, Dennis G. Whyte, Massachusetts Institute of Technology, Michael C. Zarnstorff, Princeton University, “A Review of the DOE Plan for U.S. Fusion Community Participation in the ITER Program”, National Academy of the Sciences, http://www.nap.edu/catalog.php?record\_id=12449]

The committee is concerned that the lack of funding stability will make it difficult for the U.S. to effectively participate in ITER, and ultimately, to access and thus benefit from the valuable scientific and technical knowledge to be gained from the facility. ITER is the most globally participatory science project in history, and represents a significant step forward in the worldwide effort to develop commercially-viable fusion power. These funding developments threaten to keep the U.S. from being a participant in this important endeavor, and thus its ability to capitalize on advances made from ITER. It also, therefore, potentially impairs the U.S.’ ability to participate effectively in and benefit from future fusion projects that will bring commercial fusion power closer to reality. It would be a tremendous loss if the U.S. were unable to participate, and thus severely limit the DOE/OFES’ ability to achieve its overarching goal. The committee notes the wise decisions taken by DOE to keep the U.S. engaged, to the extent possible, in the ITER project despite budget difficulties. As the IO develops its full functionalities it will be imperative that the U.S. establish itself as a stable and participatory partner if it is to accomplish the goals set forward by DOE, Congress, the President, and the plasma science community. The committee is concerned, however, about the ramifications that the FY08 appropriations will have on the continued progression of developing a U.S. plan for participation in the ITER project, as well as on the establishment of robust participation by U.S. scientists in the ITER research effort. As stated earlier, the FY08 budget does not allocate funds to ITER as planned. Such unexpected, dramatic oscillations in commitment not only adversely affect the U.S.’ national standing amongst its peers in the ITER project, they deleteriously weaken the efficacy of careful planning that otherwise ensure balance across the nation’s broad scientific enterprise. Stable and predictable funding has been recommended in numerous NRC and FESAC reports, and this committee echoes the sapience of those recommendations.8 Failure to meet its obligations from the outset of the project will also jeopardize other countries’ willingness to collaborate with the U.S. in future major scientific projects, possibly including a DEMO reactor. If the participation of U.S. scientists at ITER is a Congressional priority, the stability of the U.S.’ contributions to the project needs to be ensured. Finding: The committee underscores as its greatest concern the uncertain U.S. commitment to ITER at the present time. Fluctuations in the U.S. commitment to ITER will undoubtedly have a large negative impact on the ability of the U.S. fusion community to influence the developing ITER research program, to capitalize on research at ITER to help achieve U.S. fusion energy goals, to participate in obtaining important scientific results on burning plasmas from ITER, **and to be an effective participant in and beneficiary of future international scientific collaborations**. Recommendation: The Department of Energy should take steps to seek greater U.S. funding stability for the international ITER project to ensure that the United States remains able to influence the developing ITER research program, to capitalize on research at ITER to help achieve U.S. fusion energy goals, to participate in obtaining important scientific results on burning plasmas from ITER, and to be an effective participant in and beneficiary of future international scientific collaborations.

#### ITER funding sends a critical signal to graduate students -- cuts wreck their motivation for STEM careers.

**Pace, ‘8**

[David, graduate student in the Department of Physics and Astronomy -- UCLA, Ph.D. in experimental plasma physics in progress, 1-5, “The United States Will Probably Desert ITER Permanently,” http://www.davidpace.com/physics/graduate-school/us-leave-iter.htm]

The APS Division of Plasma Physics quickly released a statement detailing their displeasure with the nixing of ITER's funding. Similar sentiments have been released by other institutions though it does not seem the physics researcher bloc exercises much influence at present. The cut may kill our role in ITER, but it also seriously wounds Fermilab. High energy physicists share our sadness over this budget news. The collection of circumstances now present do not bode well for ITER and they encourage renewed concern over U.S. fusion and plasma research in general. It seems that history is repeating itself with regard to our role in ITER. An unwilling Congress, the lack of powerful supporters, and economic pressures are aligned against a U.S. presence in ITER. The Government Accountability Office has highlighted both the need for more fusion Ph.D.'s in the workforce and the fact that as many of half of all plasma science and engineering Ph.D.'s leave the field (plain text, pdf). As a member of the group of graduate students in this field I can positively state that our discussions focus on events like this ITER cut and the uncertainty in funding for this type of research is a major motivation for moving to other sectors and very different careers. Supporting ITER encourages a new generation of plasma scientists as much as cutting it leads these same people to other fields.

### Uniqueness

#### US is maintaining its ITER commitment -- flat budget means the plan forces tradeoffs.

Hand, ‘12

[Eric, Nature, 7-24, “US fusion in budget vice,” http://www.nature.com/news/us-fusion-in-budget-vice-1.11061]

For years, US researchers have been steadfast in their support of ITER, the world’s largest fusion-energy experiment, which is under construction near Cadarache, France. But with funding commitments to ITER now putting the squeeze on three existing facilities in the United States, enthusiasm for the international project is becoming as difficult to sustain as a fusion reaction. “I think we should ask whether this is the right path,” Earl Marmar, head of the Alcator C-Mod fusion experiment run by the Massachusetts Institute of Technology in Cambridge, told colleagues on 18 July. The venue was a meeting of a US Department of Energy (DOE) group tasked with setting priorities for the non-ITER portion of the US fusion programme. At the meeting, in Bethesda, Maryland, Marmar pointed out that when US fusion researchers signed on to ITER in 2003, the project’s total construction cost was projected to be about US$5 billion, of which the United States would provide 9% over ten years. Now, the construction costs are projected to be roughly four times as much. Furthermore, the funds to support ITER were not supposed to be siphoned from existing facilities — yet if the total budget for US fusion science remains flat, as is expected, that is precisely what will happen (see ‘Death by ITER’). Marmar’s facility houses one of three US tokamaks — doughnut-shaped vessels in which physicists magnetically confine hydrogen nuclei in a plasma and heat them until they fuse and liberate energy. Alcator received $29 million in federal funding this year. But as ITER payments increase, US President Barack Obama’s 2013 budget proposal for the DOE would chop Alcator’s allocation back to $16 million, shutting down operations and forcing the experiment to lay off more than half of its 120 staff members.

#### More ev -- fusions being cut now to fund ITER.

Vastag, ‘12

[Brian, Washington Post, 6-25, “Budget cuts threaten pursuit of nuclear fusion as a clean energy source,” http://www.washingtonpost.com/national/health-science/budget-cuts-threaten-pursuit-of-nuclear-fusion-as-a-clean-energy-source/2012/06/25/gJQAKlpS2V\_story.html]

President Obama’s budget request for next year cuts domestic fusion research by 16 percent, to $248 million. It would shutter a fusion lab at MIT, one of four funded by the Department of Energy. It would slash 50 to 100 jobs from the 450 at the Princeton lab. And it would use the $48 million in total savings to boost the U.S. contribution to an international fusion mega-project now under construction in the south of France, called ITER, a project whose estimated costs have grown to $23 billion and whose start date has been pushed back to the next decade. In a time of flat federal spending, **the president has made a choice to fund the international project** — whose costs to the United States will grow in coming years, according to Energy Department projections, to as much as $300 million a year — at the expense of the domestic program. (The United States pledged funding to ITER in 2003, joining the European Union, Russia, China, India, South Korea and Japan.)

### 2nc Pero

**Pero 12 -** Acting Director of Energy within the Directorate General for Research – European Commission, (Hervé, "The Next Six Months Will Be Crucial", ITER Newsline, <http://www.iter.org/newsline/224/1178>)

There are good reasons why the European Union supports, and will continue to support, ITER.

ITER is a major international project. It opens long-term scientific, technological and industrial opportunities, and it is in line with the European energy policy defined in the Energy Roadmap 2050 that calls for a low-carbon, competitive economy by 2050 and a 60 percent reduction of CO2 emissions in the power sector by 2030.

Due to the many challenges of fusion energy—just look at the size of the investment in ITER—this is a project that could only be attempted at an international level.

However, let's always remember that fusion technology remains in competition with other technological approaches for energy generation. We therefore need to implement and stop losing time. We must bear in mind that we have been entrusted with public funds, which gives us an enormous responsibility towards the citizens within the ITER Members.

Since the European Union has agreed to earmark funds for ITER through 2020 at the level of EUR 6.6 billion (of which EUR 2.3 billion is for 2012-2013), we have concerns regarding the schedule slippages that have occurred over the past several months. Slippages do not contribute to the positive image of the project; they also risk undermining the political support for ITER if they are not corrected soon. The next six months will therefore be crucial.

Corrective actions on the schedule slippages, as they were proposed by the management of the ITER Organization during this week's meeting of the Management Advisory Committee (MAC), show the right approach. There is a consensus among all ITER Members on the need to preserve the momentum of the project. It is also crucial to soon complete the design of the vacuum vessel and also to deliver the final set of design data for the conclusion of the Tokamak Complex construction contract.

The European Union will, along with the MAC, closely monitor the implementation of all actions during the next weeks, which are critical in order to confirm the success of the proposed recovery plan.

#### The only possible aff spin is that ITER needs ‘momentum’ – and that’s building now – ITER is on the verge of new breakthroughs and the EU is driving it

**Science Daily, 10/8/**12 (“Paving the Way for Commercial Fusion Power Plants”

<http://www.sciencedaily.com/releases/2012/10/121008091548.htm>)

Latest results from the Joint European Torus (JET) fusion device are giving researchers increasing confidence in prospects for the next-generation ITER project, the international experiment that is expected to pave the way for commercial fusion power plants. Operation with a new lining inside JET has demonstrated the suitability of materials for the much larger and more powerful ITER device.

JET, Europe's premier magnetic confinement fusion facility, based at Culham, UK, has completed eleven months of tests to simulate the environment inside ITER and to prototype key components. For this purpose JET has been successfully transformed into a 'mini-ITER' with a wall made of the same materials -- beryllium and tungsten -- that ITER plans to use. Initial results will be summarised by Dr Francesco Romanelli, Leader of the European Fusion Development Agreement (EFDA) and JET Leader, at the IAEA Fusion Energy Conference in San Diego, U.S. on October 8.

At the heart of tokamak fusion reactors like JET is a ring-shaped vacuum vessel in which very hot plasma is confined using magnetic fields. Selecting the correct materials for the inner wall of this vessel is essential. Firstly to minimise 'pollution' when small amounts of wall materials enter the plasma, and secondly to prevent the fusion fuels from becoming trapped in the wall. ITER will use beryllium for the main wall and tungsten (with its higher melting point) for the floor of the chamber -- the 'divertor' -- where plasma is exhausted and heat loads are greatest. A 20-month engineering upgrade during 2010 and 2011 installed a new plasma-facing wall inside JET to validate these materials for ITER.

From the first test in August 2011, the beryllium and tungsten lining enabled more reliable plasmas to be produced. Crucially, researchers from the 27 European fusion laboratories which participate in JET have found that the amount of fuel being retained in the wall is at least ten times less than in the previous, carbon-based, configuration. The results achieved may lead ITER to drop plans for an initial phase of operation with carbon and adopt a beryllium-tungsten wall from the outset, bringing a significant saving in time and cost for the project.

Experiments at JET will restart in early 2013, with the goal of demonstrating plasma performance even beyond ITER's expectations. Looking further ahead, EFDA is already planning a full 'dress rehearsal' for ITER -- an experimental campaign at JET using the optimum deuterium-tritium fuel mix that is needed for high-power fusion operation. JET is the only device currently able to run fusion plasmas with tritium, and exploiting these capabilities will be a crucial part of ITER preparations. ITER Director General Osamu Motojima praised the work being done at JET during a visit this summer and has been discussing collaborations with EFDA on future experiments.

Dr Francesco Romanelli said: "**These results are very encouraging for ITER**. JET is getting as close to ITER conditions as any present-day fusion device can. If this performance is scaled up, ITER will be successful and take a huge step towards the goal of commercial fusion power."

#### European funding is on track

**Feder, 12** (Toni, “Progress in fusion, but not in its US funding” Physics Today, June, <http://dx.doi.org.proxy.lib.umich.edu/10.1063/PT.3.15>)

Indeed, despite tight economies, Europe is on track with its ITER contributions, having recently allocated an additional €1.3 billion ($1.7 billion) to the project; as host of ITER, Europe bears a 45% lion’s share. European money for national fusion programs has gone down, says Sibylle Günter, director of Germany’s Max Planck Institute for Plasma Physics. “Germany has a strong program, but it’s an ongoing discussion. The general problem of the economy hits all countries [in Europe]. The question is how the politics play out.” Like the US, the other partners—China, India, South Korea, Russia, and Japan—have each committed to providing 9% of ITER.

### 2NC Exts – Funding K/T ITER (Signal)

#### Funding sends a key signal of participation -- it’s necessary for the US to benefit from research and innovation from ITER.

NRC, ‘8

[National Research Council, “A Review of the DOE Plan for U.S. Fusion Community Participation in the ITER Program,” July, http://www.nap.edu/catalog.php?record\_id=12449]

The committee is concerned that the lack of funding stability will make it difficult for the U.S. to effectively participate in ITER, and ultimately, to access and thus benefit from the valuable scientific and technical knowledge to be gained from the facility. **ITER is the most globally participatory science project in history**, and represents a significant step forward in the worldwide effort to develop commercially-viable fusion power. These funding developments threaten to keep the U.S. from being a participant in this important endeavor, and thus its ability to capitalize on advances made from ITER. It also, therefore, potentially impairs the U.S.’ ability to participate effectively in and benefit from future fusion projects that will bring commercial fusion power closer to reality. It would be a tremendous loss if the U.S. were unable to participate, and thus severely limit the DOE/OFES’ ability to achieve its overarching goal. The committee notes the wise decisions taken by DOE to keep the U.S. engaged, to the extent possible, in the ITER project despite budget difficulties. As the IO develops its full functionalities it will be imperative that the U.S. establish itself as a stable and participatory partner if it is to accomplish the goals set forward by DOE, Congress, the President, and the plasma science community. The committee is concerned, however, about the ramifications that the FY08 appropriations will have on the continued progression of developing a U.S. plan for participation in the ITER project, as well as on the establishment of robust participation by U.S. scientists in the ITER research effort. As stated earlier, the FY08 budget does not allocate funds to ITER as planned. Such unexpected, dramatic oscillations in commitment not only adversely affect the U.S.’ national standing amongst its peers in the ITER project, they deleteriously weaken the efficacy of careful planning that otherwise ensure balance across the nation’s broad scientific enterprise. Stable and predictable funding has been recommended in numerous NRC and FESAC reports, and this committee echoes the sapience of those recommendations.8 Failure to meet its obligations from the outset of the project will also jeopardize other countries’ willingness to collaborate with the U.S. in future major scientific projects, possibly including a DEMO reactor. If the participation of U.S. scientists at ITER is a Congressional priority, the stability of the U.S.’ contributions to the project needs to be ensured.

## 2nc STEM

### A2 stem

#### High demand and job openings ensures scientists pick the nuclear field

Susie Hay (consultant at shortwork, which designs projects linking people and communities, including the Footprints programme for the National Decommissioning Agency (NDA)) and Michael Kelk (communications officer with the NDA) 2009 “Working in physics: A fresh look at nuclear” http://www.iop.org/careers/workinglife/articles/page\_39053.html

A new industry-wide graduate scheme aims to get the next generation of nuclear scientists thinking about community and environmental issues from the outset. Susie Hay and Michael Kelk describe the “nucleargraduates” programme. As everyone must surely now acknowledge, the economy is heading for recession in many countries, and several industries are planning to cut back on their workforces. Physics and engineering graduates may have an advantage in this economic climate, however, because one major sector is definitely still hiring talented people from these disciplines: the nuclear industry. Nuclear power is back on the political agenda for a number of reasons. These include the need to secure and sustain future power supplies, reduce carbon emissions and address the environmental problems associated with decommissioning aging power plants. But like other sectors, the nuclear industry has been affected by a shortage of science and technology graduates in recent years. Indeed, the average age of an employee in the industry in the UK is 50. Because the task of decommissioning some reactor sites — including the UK’s first, Sellafield in Cumbria — may take up to 150 years, it is crucial for organizations like the UK Nuclear Decommissioning Authority (NDA) to attract a new generation of workers with diverse skills. One aspect of the NDA’s recruitment campaign is an industry-wide graduate scheme, called “nucleargraduates”. Launched last year, it has so far recruited 23 graduates. About a quarter of these have physics degrees, and applications from physicists have trebled since the first intake started. Programme structure The two-year-long nucleargraduates programme sends participants on four professional secondments in different organizations and diverse locations. Participants in the scheme can expect to do three of their six-month placements in UK locations, which range from the Plymouth-based construction company Atkins and the NDA’s headquarters in West Cumbria to the Dounreay Research Site on the northern tip of Scotland. They will then go on a four-month placement overseas, typically in France, North America or Japan. More than 20 leading companies, regulators and government bodies are sponsoring the programme, making it the most comprehensive such scheme the industry has ever seen. Participants include global manufacturers like Rolls Royce and BAE Systems, engineering consultancy firms like Jacobs and Amec, government bodies such as the Environment Agency, and nuclear-site operators like Magnox North and Sellafield Limited. Participants in the scheme have, for example, worked at the high-level-waste plant at Sellafield and on the waste-transportation strategy at the UK Atomic Energy Agency site in Harwell, Oxfordshire. Building community links One important aspect of the scheme is a compulsory corporate social responsibility (CSR) programme called Footprints, which is designed to enable the participants to make small but lasting impacts in the areas and communities where the nuclear industry operates. As part of the programme, graduates spend 10% of their time working in local not-for-profit enterprises, schools and small businesses. By devoting such a significant amount of time to the endeavour, the NDA aims to make Footprints a real driver for change rather than a series of unconnected charitable gestures. The projects need not involve nuclear issues directly. Some participants have, for example, gone into primary schools to excite young people about science, technology, engineering and maths. Others, meanwhile, have been working with the Connexions Cumbria organization and young people not in employment, education or training to help them shape local services to meet their needs and increase their aspirations. One of the participants is Steve Mahay, a physics graduate from Birmingham University in the UK. His main role in his first placement at the Harwell site was to work on waste transportation. As part of his Footprints project, Mahay designed webpages for Didcot First, a local group that promotes the Oxfordshire town as a centre for science and technology. He also worked with Susan Elder, a chemistry graduate from Strathclyde University in the UK, to organize an event to promote science among young people. Mahay and Elder estimate that over 200 children came to see the demonstrations on magnets and how to save energy. “I was pleasantly surprised by how interested I became in the corporate-social-responsibility segment of my work,” says Elder. “The CSR programme really helped me to consider the world outside the NDA, and allowed me to learn new skills while doing something useful for the local community.” Looking to the future The reason for including the Footprints work in the programme is that although the nuclear industry is currently hiring new people to work on decommissioning older reactors, the closure of these “legacy” facilities can also bring severe job losses to local communities and businesses that depend on the nuclear industry. For example, when the Dounreay reactor finally closes in 2025, nearby communities like Thurso will lose about 2000 jobs. To minimize the impact on the area, the nuclear industry is working in partnership with the Highlands and Islands Development Agency, Caithness Council, local communities and potential entrepreneurs within and outside the nuclear industry to support and create new businesses — for example in wind and tidal energy — to help sustain the local economy. With such strategic goals in mind, the Footprints programme provides a way for the next generation of managers in the nuclear industry to look beyond the business to the wider socioeconomic context in which it operates. The end result of the Footprints scheme, the NDA hopes, will be that skills the participants gain within the industry including project management, communication and creative problem solving — are shared with the community. Equally, strong links with local communities allow industry leaders to keep in touch with opinions and experiences from outside the nuclear business. This knowledge can then help inform decision-making about the future of the industry. In the past, inward-looking and “them and us” cultures led to gaps in understanding, and a lack of effective partnerships between the industry and the communities in which it operates. For example, the first generation of nuclear sites like Sellafield were created to make weapons, not generate power, and the associated Cold War paranoia meant that such sites were not built to be “future proof”. It is only now, after the sites have been shut down and the NDA began dealing with them in 2004 that we are realizing the extent of the challenge. The industry now recognizes the importance of working together to build sustainable communities, and Footprints is an important part of that goal. Interested? The 23 members of the 2008 nucleargraduates scheme all have good academic qualifications; the programme requires at least a 2.2 BSc degree and some participants have higher degrees. Although non-UK citizens are eligible, such applicants must have the right to work in the UK and may need to go through more extensive background checks. Beyond this, the programme’s organizers are also looking for graduates with the curiosity, creativity and determination to meet the considerable challenges facing the nuclear industry now and in the future. Because of the “umbrella” nature of the scheme, participants are not guaranteed a job at the end of their placements. However, they will have gained enough experience within the industry to know what interests them most, and can then apply for a specific role at companies or organizations that appeal to them. As NDA graduate manager Carl Dawson emphasizes, it is not a “sausage machine” or one-size-fits all programme, and graduates are expected to explore many possibilities in the industry, particularly where skill shortages exist.

## 2nc fusion development

### A2 aging crisis

#### economic growth swamps any problems from ageing

**Fund Strategy, ‘6** (4-3, “Economists clash over ageing timebomb fears “L/N)

The world's ageing population poses both fiscal and economic growth challenges, according to Richard Jackson, senior fellow at the Center for Strategic and International Studies.

Jackson says improved life expectancy and lower birth rates in the developed world are leading to a permanent upward shift in age structures.

These two forces are driving down the size of countries' workforces as a share of total population and increasing the proportion of elderly, which may hamper global GDP growth. A bigger retired population means higher pension, healthcare and social security costs and, on average, developed countries spend about 11% of GDP on the elderly, says Jackson. The Organisation for Economic Cooperation and Development predicts that the figure will rise to 18% by 2050, while the CSIS expects the proportion to be even higher, at 23%.

Jackson adds that unless productivity rates rise more than employment rates fall, GDP growth will be at risk. Other threats include asset devaluation and capital flow swings in financial markets.

He says a number of solutions are possible, including scaling backpay- as-you-go retirement benefits and encouraging longer working lives.

With rising tax burdens and widening public sector deficits in a number of developed economies, a solution needs to be found, says Jackson. "The sooner we engage the issue, the better," he adds.

But Phil Mullan, economist and author of The Imaginary Time Bomb, disagrees. Mullan says: "Some see it as an economic challenge, but it should be seen as a social opportunity."

Mullan questions society's anxieties concerning ageing populations, arguing that it should be a good thing that people are living longer. He gives little regard to long-term predictions on the effects of future demographic changes on GDP growth. "It is dangerous and foolish to determine any reforms required from projections 40 or 50 years into the future," he says.

Not knowing how demographics, economic growth and employment ratesare going to change in the next 40 years makes for unreliable predictions, he argues.

While average life expectancy has been increasing for decades, GDP has also grown consistently, explains Mullan. "Economic growth has been the answer for the past 100 years," he says.

### A2 Enviro

**The insane amounts of abuse the environment has taken shows it won’t collapse**

**Easterbrook 95,** Distinguished Fellow, Fullbright Foundation (Gregg, A Moment on Earth pg 25)

IN THE AFTERMATH OF EVENTS SUCH AS LOVE CANAL OR THE Exxon Valdez oil spill, every reference to the environment is prefaced with the adjective "fragile." "Fragile environment" has become a welded phrase of the modern lexicon, like "aging hippie" or "fugitive financier." But the notion of a fragile environment is profoundly wrong. Individual animals, plants, and people are distressingly fragile. **The environment** that contains them **is** close to **indestructible.** The living environment of Earth has survived ice ages; bombardments of cosmic radiation more deadly than atomic fallout; solar radiation more powerful than the worst-case projection for ozone depletion; thousand-year periods of intense volcanism releasing global air pollution far worse than that made by any factory; reversals of the planet's magnetic poles; the rearrangement of continents; transformation of plains into mountain ranges and of seas into plains; fluctuations of ocean currents and the jet stream; 300-foot vacillations in sea levels; shortening and leng thening of the seasons caused by shifts in the planetary axis; collisions of asteroids and comets bearing far more force than man's nuclear arsenals; and the years without summer that followed these impacts. Yet hearts beat on, and petals unfold still. Were the environment fragile it would have expired many eons before the advent of the industrial affronts of the dreaming ape*.* Human assaults on the environment, though mischievous, are pinpricks compared to forces of the magnitude nature is accustomed to resisting.

### A2 disease

**Countermeasures and basic biology show how absurd this impact is**

**Coates 2009** – former adjunct professor at George Washington University, President of the Kanawha Institute for the Study of the Future and was President of the International Association for Impact Assessment and was President of the Association for Science, Technology and Innovation, M.S., Hon D., FWAAS, FAAAS, (Joseph F., Futures 41, 694-705, "Risks and threats to civilization, humankind, and the earth”, ScienceDirect, WEA)

Could diseases in animals be converted in a laboratory into ones transmissible among people? The answer is yes, but it is very unlikely that one could accomplish this easily and if one did have an organism that would transmit from animal to people, and then people to people, it would only be significant if that animal was widely distributed in the target area. So birds would be ideal and rats might be significant. There are few other animals around to transmit to people unless we consider pets and insects. We have pretty good protection against insects and, in a crisis, we would be ready to use somewhat more dangerous materials like DDT to fight a contaminated invasion until we developed other remedies. The serious limitation on self-propagating diseases generated for terrorists’ purposes is that it could be self-defeating because if it is effectively self-propagating, it will eventually bounce back to the attacking country and, presumably, have similar effects there as it has in the target country.

Early detection of disease spread is fairly straightforward in terms of modern epidemiology in most parts of the world. The most dramatic effects, aside from deaths, would be in the preventive measure to reduce the propagation of the disease from spreading by extremely severe reduction in travel for both people and cargoes, domestically and internationally. This may extend for quite a time until a preventive measure or vaccine is developed, tested and proven. Even assuming that an enemy initiated an attack, there would be the problem of where and what would happen as we learned about the attack. Would it become self-limiting? Suppose they managed a release in ten cities. Those ten largest cities, perhaps, represent 10% of the population and we could take internal measures, as suggested above, to contain it in those cities. Pandemics are a credible catastrophic situation slowing and disrupting the economy and society but not threatening nationhood in the advanced nations. A high death-rate pandemic is likely to create a greater setback in Worlds 2 and 3. The Black Death in Europe 1347–1352 killed an estimated third of the population, 25 million people. The Spanish Flu in 1918 killed 20–50 million people and infected a billion. The latter had no lasting effects comprising a threat to stability.

## 1nr STEM

### Case

**Won’t pass the nuclear threshold**

**Moore 6** (Scott; Research Assistant – East Asia Nonproliferation Program – James Martin Center for Nonproliferation Studies – Monterey Institute of International Studies, “Nuclear Conflict in the 21st Century: Reviewing the Chinese Nuclear Threat,” 10/18, http://www.nti.org/e\_research/e3\_80.html)

Despite the tumult, there is broad consensus among experts that the concerns generated in this discussion are exaggerated. The size of the Chinese nuclear arsenal is small, estimated at around 200 warheads;[3] Jeffrey Lewis, a prominent arms control expert, claims that 80 is a realistic number of deployed warheads.[4] In contrast, the United States has upwards of 10,000 warheads, some 5,700 of which are operationally deployed.[5]

Even with projected improvements and the introduction of a new long-range Intercontinental Ballistic Missile, the DF-31A China's nuclear posture is likely to remain one of "minimum deterrence."[6] Similarly, despite concern to the contrary, there is every indication that China is extremely unlikely to abandon its No First Use (NFU) pledge.[7] The Chinese government has continued to deny any change to the NFU policy, a claim substantiated by many Chinese academic observers.[8] In sum, then, fears over China's current nuclear posture seem somewhat exaggerated.

This document, therefore, does not attempt to discuss whether China's nuclear posture poses a probable, general threat to the United States; most signs indicate that even in the longer term, it does not. Rather, it seeks to analyze the most likely scenarios for nuclear conflict. Two such possible scenarios are identified in particular: a declaration of independence by Taiwan that is supported by the United States, and the acquisition by Japan of a nuclear weapons capability.

Use of nuclear weapons by China would require a dramatic policy reversal within the policymaking apparatus, and it is with an analysis of this potential that this brief begins. Such a reversal would also likely require crises as catalysts, and it is to such scenarios, involving Taiwan and Japan, that this brief progresses. It closes with a discussion of the future of Sino-American nuclear relations.

#### Interdependence checks

**Perry and Scowcroft 9** William (Michael and Barbara Berberian professor at Stanford University.) and Brent (resident trustee of the Forum for International Policy.) “US Nuclear Weapons Policy.” 2009. Council on Foreign Relations. Online.

Economic interdependence provides an incentive to avoid military conflict and nuclear confrontation. Although the United States has expressed concern about the growing trade deficit with China, the economies of the two countries have become increasingly intertwined and interdependent. U.S. consumers have bought massive quantities of cheap Chinese goods, and Beijing has lent huge amounts of money to the United States. Similarly, Taiwan and the mainland are increasingly bound in a reciprocal economic relationship. These economic relation- ships should reduce the probability of a confrontation between China and Taiwan, and keep the United States and China from approaching the nuclear brink, were such a confrontation to occur. On other nuclear issues, China and the United States have generally supported each other, as they did in the six-party talks to dismantle North Korea’s nuclear weapons programs. Here, the supportive Beijing-Washington relationship points toward potentially promising dialogues on larger strategic issues.

#### Slowness checks

**Tepperman, 2009** [Jonathan, Newsweek International's first Assistant Managing Editor (now Deputy Editor), “Why Obama Should Learn to Love the Bomb” 8-29, http://www.newsweek.com/2009/08/28/why-obama-should-learn-to-love-the-bomb.html]

The risk of an arms race—with, say, other Persian Gulf states rushing to build a bomb after Iran got one—is a bit harder to dispel. Once again, however, history is instructive. "In 64 years, the most nuclear-weapons states we've ever had is 12," says Waltz. "Now with North Korea we're at nine. That's not proliferation; that's spread at glacial pace." Nuclear weapons are so controversial and expensive that only countries that deem them absolutely critical to their survival go through the extreme trouble of acquiring them. That's why South Africa, Ukraine, Belarus, and Kazakhstan voluntarily gave theirs up in the early '90s, and why other countries like Brazil and Argentina dropped nascent programs. This doesn't guarantee that one or more of Iran's neighbors—Egypt or Saudi Arabia, say—might not still go for the bomb if Iran manages to build one. But the risks of a rapid spread are low, especially given Secretary of State Hillary Clinton's recent suggestion that the United States would extend a nuclear umbrella over the region, as Washington has over South Korea and Japan, if Iran does complete a bomb. If one or two Gulf states nonetheless decided to pursue their own weapon, that still might not be so disastrous, given the way that bombs tend to mellow behavior.

## 1nr elections

### 2nc overview

#### Relations collapse causes accidental war – outweighs

Bostrom ‘02 [Nick, Dir. Future of Humanity Institute and Prof. Philosophy – Oxford U., Journal of Evolution and Technology, “Analyzing Human Extinction Scenarios and Related Hazards”, March, <http://www.nickbostrom.com/existential/risks.html>]

The first manmade existential risk was the inaugural detonation of an atomic bomb. At the time, there was some concern that the explosion might start a runaway chain-reaction by “igniting” the atmosphere. Although we now know that such an outcome was physically impossible, it qualifies as an existential risk that was present at the time. For there to be a risk, given the knowledge and understanding available, it suffices that there is some subjective probability of an adverse outcome, even if it later turns out that objectively there was no chance of something bad happening. If we don’t know whether something is objectively risky or not, then it is risky in the subjective sense. The subjective sense is of course what we must base our decisions on.[2] At any given time we must use our best current subjective estimate of what the objective risk factors are.[3] A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that **might** have been persistent enough to qualify as global and terminal. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy human civilization.[4] Russia and the US retain large nuclear arsenals that could be used in a future confrontation, either accidentally or deliberately. There is also a risk that other states may one day build up large nuclear arsenals. Note however that a smaller nuclear exchange, between India and Pakistan for instance, is not an existential risk, since it would not destroy or thwart humankind’s potential permanently. Such a war might however be a local terminal risk for the cities most likely to be targeted. Unfortunately, we shall see that nuclear Armageddon and comet or asteroid strikes are mere preludes to the existential risks that we will encounter in the 21st century.

#### Russian relations prevent global nuclear war

**NTI 9** [Global Security Newswire, “Russia Open to U.S. Suggestions on Improving Relations, Curbing Iran” http://www.globalsecuritynewswire.org/gsn/nw\_20090318\_4374.php 3/19]

Russian leaders have shown an interest in improving ... outcome," the report adds (Nixon Center release, March 16).

Russian leaders have shown an interest in improving relations with Washington, a thaw that could enable the two former Cold War rivals to cooperate more closely on efforts to curb Iran's nuclear ambitions, the Washington Post reported today (see GSN, March 16).

The two nations experienced growing tensions during the Bush administration as they disagreed over a variety of international security issues, particularly a U.S. plan to deploy missile defenses in Eastern Europe as a hedge against potential Iranian missile threats. Regarding Iran, Russia has cautiously supported some U.N. Security Council resolutions setting mild sanctions against Iran for its refusal to freeze its uranium enrichment program, but Moscow scuttled U.S. efforts last year to boost those penalties.

Trying to change the climate, U.S. President Barack Obama has sent his counterpart a letter seeking a packaged solution to U.S.-Russian disputes, and Moscow appears interested, according to some analysts and officials.

Russian officials "want to send a message to the Obama administration that they're prepared to have a new relationship, but it will have to be quid pro quo," said Dmitri Simes, president of the Washington-based Nixon Center. "If they have to sacrifice their special relationship with Iran, they want to see a change in their relationship with the United States" (Pan/DeYoung, Washington Post, March 18).

Simes directed a commission that called on the Obama administration this week to recognize the importance of good Russian relations to a breadth of international issues, including the Iranian nuclear crisis.

"Without deep Russian cooperation, no strategy is likely to succeed in preventing the proliferation of nuclear weapons, nuclear terrorism and nuclear war," says the commission report. "Working with Moscow to solve the Iran problem, including possibly strengthening sanctions on Iran if necessary, should be a top U.S. priority."

"However, America is unlikely to be able to resolve the Iranian nuclear issue solely through sanctions, and Russia's cooperation could contribute substantially to a successful outcome," the report adds (Nixon Center release, March 16).

#### Pakistan instability causes reckless nuclear launches- escalates to nuclear war

**Los Angeles Times 02**, 6/2/2002, Lexis

Nuclear war could also come as a result of mistakes in judgment by subordinate military commanders in the field, or from an accidental mishandling of the nuclear materials that are now being shifted around the battlefield, some experts say. "This is a region that tends toward misreadings, tends toward surprises, tends toward misperceptions," said Michael Krepon, founding president of the Henry L. Stimson Center, a Washington think tank. "In all of their wars, they have tended toward misreadings." There is no question that if a nuclear exchange occurred, it would inflict a horrific toll. According to a Defense Intelligence Agency assessment made public last week, a full-scale exchange could kill as many as 12 million people and could injure as many as 6 million more, not including victims of long-term radiation. The casualties would include U.S. troops stationed in the region. And the devastation would create a humanitarian and economic disaster that would scar the region for decades.

#### Turns prolif

**Graham 09,** Thomas, senior director at Kissinger Associates, Inc. He served as special assistant to the president and senior director for Russia on the National Security Council staff “ Resurgent Russia and U.S. Purprposes” The Century Foundation, foreign policy and economic think tank, <http://tcf.org/events/pdfs/ev257/Graham.pdf> NEH )

There is no graver threat to U.S. security than the proliferation of weapons of mass destruction to states or terrorist organizations intent on doing us harm. Dealing with this threat entails strengthening the nonproliferation regime, enhancing the security and reducing the quantity of fissile material and chemical and biological agents that can be used for weapons of mass destruction, controlling the knowledge and know-how to build such weapons, and preparing to mitigate the consequences should such a weapon be used. Russia is the second major nuclear power (the United States and Russia • together control 95 percent of the world’s nuclear arsenal), with long experience in the development, manufacturing, and dismantlement of nuclear weapons; massive stockpiles of plutonium and highly enriched uranium (the fuel for nuclear weapons) and biological and chemical agents; and a long history in civil nuclear power. It is indispensable to any effort to manage the proliferation problem and prevent terrorist organizations from gaining possession of weapons of mass destruction.

### 2nc media focus link / uniqueness

#### The storm has frozen the polls – the only thing that can hurt Obama is being distracted from the storm

**Knickerbocker, 10/28/12** (Brad, Christian Science Monitor, “Hurricane Sandy liveblog: How might the storm impact the presidential race?” <http://www.csmonitor.com/USA/2012/1028/Hurricane-Sandy-liveblog-How-might-the-storm-impact-the-presidential-race>)

The October Surprise turns out to be a superstorm with the deceptively placid name of Sandy, raising the possibility of another asterisk election if power is out for much of the final week, or even on Election Day, in key parts of Virginia and/or Ohio. Just the frenzy around the forecast could disrupt this week's early voting, which probably hurts President Obama. But he also has an opportunity to be seen as president – a commander-in-chief moment. So no one's sure, but it's a huge topic in Boston and Chicago. Here is the take from some of the smartest people in politics:

A top Democrat: "Anything that disrupts campaign/candidate schedules at this point in the race is significant. These events are important to the campaigns as a way of activating and energizing voters (even more important in early voting states). The earned media pieces can be made up in other ways (satellite interviews, etc.), but there is no substitute for candidate travel. ...

"Also, nothing galvanizes attention or sucks up more media bandwidth than a major weather event. The storm led all of the networks news broadcasts for the last three days and will do so for the next three, at least. I guess the net-net of that is that it helps freeze or solidify the race in place. If you believe that the President maintains a narrow but statistically important lead in the battleground states, anything that prevents Romney from getting traction or changing the dynamic is potentially important."

#### It’s seen as Obama’s final test – he can’t be distracted and every eye will be focused on his response

**Sullivan, 10/26/12** (Sean, “How Hurricane Sandy could test Obama’s leadership” Washington Post, <http://www.washingtonpost.com/blogs/the-fix/wp/2012/10/26/how-hurricane-sandy-could-test-obamas-leadership/>)

But for Obama in particular, the storm’s impact will be a test. There are a few key reasons for this.

For one thing, he is the president. The federal government’s response to the storm will ultimately be his responsibility. White House Press Secretary Jay Carney told reporters Thursday that the president’s concern about the storm is making sure people in potentially affected areas prepare accordingly.

“We leave it to the professionals to track storms and make predictions about where it will travel. The President’s concern about this storm is making sure that citizens in potentially affected areas are aware of it and taking the necessary precautions, and making sure that FEMA is working as necessary with local officials in preparation for a storm,” Carney said.

Sandy is going to remain a national story for days, and as such, will be atop the minds of many voters. They’ll be watching to see the federal agencies which fall under the president’s oversight respond to the disaster, and how he reacts.

#### It’s a tightrope – the only thing voters care about is the storm so Obama can’t afford distractions

**Lightman, 10/27/12** (David, McClatchey Newspapers, “Campaign races against Hurricane Sandy”

<http://www.sltrib.com/sltrib/world/55162085-68/obama-romney-campaign-president.html.csp>)

Obama had another task: Monitoring and managing the federal government’s response. At the outset of such catastrophes, presidents have an opportunity to gain support, since they can show they’re effectively managing a crisis - though that can backfire, too, as President George W. Bush learned in the bungled aftermath of Hurricane Katrina in 2005.

"This an example yet again of the president having to put his responsibilities as commander-in-chief and leader of the country first while at the same time he pursues his responsibilities as a candidate for re-election," White House spokesman Josh Earnest said Saturday. Obama Saturday spoke to federal emergency management officials on Air Force One by phone.

In Florida, Romney told supporters that they should keep residents along the Eastern Seaboard in "your minds, your hearts." "You know how tough these hurricanes can be," he said.

If the storm intensifies, it’s likely to get tougher for Romney and Obama to get the attention of voters in these final, crucial days before the Nov. 6 election. It could also hurt their get-out-the-vote effort in early voting states. Polls show Obama and Romney locked in a statistical tie nationally and in the 11 swing states likely to decide the presidency.

### AT: Frankenstorm Thumper

#### The plan shreds Obama’s credibility by making him look out of touch

**Shoop, 10/26/12** – editor of Government Executive (Tom, “Obama: I Know, There's a Huge Storm Coming” <http://www.govexec.com/federal-news/fedblog/2012/10/obama-i-know-theres-huge-storm-coming/59067/?oref=voices-module>)

When you're president of the United States, even if you're in the midst of a heated reelection campaign (come to think about it, especially if you are), you can't afford to leave people with the impression you're out of touch when a potentially catastrophic natural disaster is about to unfold.

That's why President Obama interrupted his seemingly nonstop tour of swing states today for a meeting at the White House with Federal Emergency Management Agency Administrator Craig Fugate, National Hurricane Center Director Rick Knabb, and Homeland Security Advisor John Brennan. Obama got an update on preparations for Hurricane Sandy and the impending "Frankenstorm" that could hit the East Coast when it comes ashore.

The White House made sure to distribute the photo above of the meeting, and to issue a statement noting that the president had "directed Administrator Fugate to ensure that all available federal resources are being brought to bear to support state and local responders in potentially affected areas along the eastern seaboard as they prepare for the severe weather."

#### Obama will capitalize on the storm – bolsters his leadership credentials

**Kurtz, 10/28**/12 - Howard Kurtz is The Daily Beast and Newsweek’s Washington bureau chief (“Hurricane Sandy Upends the Presidential Campaign” <http://www.thedailybeast.com/articles/2012/10/28/hurricane-sandy-upends-the-presidential-campaign.html>)

There is one bright spot for Obama, who has been briefed on the storm’s progress by the heads of FEMA, the National Hurricane Center, and the Homeland Security Deparment. If the hurricane is as deadly as everyone expects, he will be able to make news as commander in chief, mobilizing the federal response, and expressing compassion for victims. That might be a better image than that of a candidate repeating the same attack lines on the hustings.

One thing is clear: Mother Nature is about to take over this campaign, and might even affect the outcome.

### AT: Lame Duck

#### Special sessions

Hornick ‘8 Ed, staff writer, CNN, GOP lawmakers want special session on energy crisis, <http://edition.cnn.com/2008/POLITICS/07/31/congress.session/>

Top congressional Republicans Thursday called for a special session of Congress to deal with the oil crisis plaguing the country. President Bush called on Congress Wednesday to allow offshore oil drilling, saying the need to lower crude and gas prices made it urgent. Lawmakers are debating legislation to allow drilling for oil along the U.S. coastline, particularly in Florida and California. The Senate, which is set to begin summer recess after this week, has been gridlocked for days on various energy bills. Congressional Republicans said they want an open debate and accuse Democrats of trying to limit amendments to avoid a vote on offshore drilling -- an assertion the Democrats deny.

### AT: Relations Low

#### nah

**Weir 12.** [3-27 -- Fred, Obama asks Russia to cut him slack until reelection, Minnesota Post, p. http://www.minnpost.com/christian-science-monitor/2012/03/obama-asks-russia-cut-him-slack-until-reelection]

Russian experts say there's little doubt the Kremlin would like to see Obama re-elected. Official Moscow has been pleased by Obama's policy of "resetting" relations between Russia and the US, which resulted in the new START treaty and other cooperation breakthroughs after years of diplomatic chill while George W. Bush was president. The Russian media often covers Obama's lineup of Republican presidential challengers in tones of horror, and there seems to be a consensus among Russian pundits that a Republican president would put a quick end to the Obama-era thaw in relations. "The Republicans are active critics of Russia, and they are extremely negative toward Putin and his return to the presidency," says Dmitry Babich, a political columnist with the official RIA-Novosti news agency. "Democrats are perceived as more easygoing, more positive toward Russia and Putin." Speaking on the record in Seoul, Mr. Medvedev said the years since Obama came to power "were the best three years in the past decade of Russia-US relations.… I hope this mode of relations will maintain between the Russian Federation and the United States and between the leaders." During Putin's own election campaign, which produced a troubled victory earlier this month, he played heavily on anti-Western themes, including what he described as the US drive to attain "absolute invulnerability" at the expense of everyone else. But many Russian experts say that was mostly election rhetoric, and that in office Putin will seek greater cooperation and normal relations with the West. "Russian society is more anti-American than its leaders are," says Pavel Zolotaryov, deputy director of the official Institute of USA-Canada Studies in Moscow. "Leaders have to take popular moods into account. But it's an objective fact that the US and Russia have more points in common than they have serious differences. If Obama wins the election, it seems likely the reset will continue."

#### Romney win would crush US-Russian cooperation -

Mark Adomanis, 4-17-2012; analyst for Forbes, Mitt Romney's Incoherent Russia Policy http://www.forbes.com/sites/markadomanis/2012/04/17/mitt-romneys-incoherent-russia-policy/

According to his campaign’s own words, Romney will basically ignore Central Asian authoritarianism, which literally everyone agrees is far nastier, more brutal, and more open than anything the Russians are guilty of, while simultaneously focusing on democracy promotion and regime change in Russia. That is to say Romney’s Russia policy will, to a large extent, be based on relentlessly confronting the Kremlin. But won’t the Kremlin react extremely poorly to an American policy that seeks not only to co-opt its longtime allies in Central Asia and but to depose the current regime? According to Romney, the answer is no: the Kremlin will be so impressed by the bravery and willpower of this American effort that it will more actively support American goals (though precisely why it would react positively to an open challenge to its authority is left unsaid). Despite the endless accusations of Obama’s “double standards” and his “moral relativism” Romney is quite openly embracing his own set of double-standards. As the campaign’s website itself says, one set of moral values will be applied to the Central Asians while a completely different, and much more exacting, set of values will be applied to the Russians. It goes almost without saying that this is the sort of bad-faith posturing that really drives the Russians batty and that they react very poorly to this sort of thing. While I personally am of a strongly realist orientation, and have little patience for the attempt to inject “values” into an international system that naturally tends to be amoral and anarchic, I understand that there is a coherent case to be made for the neoconservative position. Very intelligent people, including many of my friends and acquaintances, hold views similar to the ones Romney espouses towards, and while I can’t say I find them convincing I’m not nearly egotistical enough to think that my own views are the only “correct” ones. However Romney’s mix-and-match approach, a dollop of realism here, a large dose of neoconservatism there, a dash of accommodation here and a big helping of confrontation there, will not be a sober-minded attempt to appeal to everyone, but will instead be a disjointed mess that will simultaneously alienate and antagonize almost everyone in the region. While the foreign policy of any American president will never be perfectly within the bounds of a single school of thought, Romney’s entire Russia policy is a case study in avoiding hard choices. It quite openly attempts to be all things to all people: realists can look at it and see parts of their ideology, and neoconservatives can look at it and see parts of their ideology too. Romney will both openly confront the Russians and get more concessions from them, support democracy and work hand-in-hand with some of the world’s most repressive regimes, pursue missile defense and get Russian cooperation on Afghanistan, expand NATO and convince Russia to stop arming Syria, work to undermine Russia’s energy interests and get it to isolate Iran. There are no hard choices, no nasty compromises, and no trade-offs between values and interests: there is just the unapologetic exercise of American power and the positive consequences inevitably associated with it. Obama is himself very(!) far from being perfect, but at least his foreign policy seems to be a reasonably coherent attempt to advance America’s interests while avoiding, to the greatest extent possible, needless antagonism. As far as I can tell Romney’s main position is that Obama is bad, that everything he’s done is bad too, and that Romney would do better because… he said he will that’s why! There’s a deeper lesson in there about how this campaign is going to be waged, and a rather troubling one at that.

### AT: Bandow

#### Presidents follow their agendas—their examples are the exception, not the rule—we have studies.

Bernstein 12

Jonathan, writer for the Washington Monthly and a political scientist, “Campaign Promises,” Jan/Feb 2012, http://www.washingtonmonthly.com/magazine/january\_february\_2012/features/campaign\_promises034471.php

I suspect that many Americans would be quite skeptical of the idea that elected officials, presidents included, try to keep the promises they made on the campaign trail. The presumption is that politicians are liars who say what voters want to hear to get elected and then behave very differently once in office. The press is especially prone to discount the more extreme positions candidates take in primaries on the expectation that they will “move to the center” in the general election. Certainly everyone can recall specific examples of broken promises, from Barack Obama not closing Gitmo to George W. Bush and “nation building” to, well, you may remember this from the Republican National Convention in 1988: And I’m the one who will not raise taxes. My opponent, my opponent now says, my opponent now says, he’ll raise them as a last resort, or a third resort. But when a politician talks like that, you know that’s one resort he’ll be checking into. My opponent won’t rule out raising taxes. But I will. And the Congress will push me to raise taxes, and I’ll say no, and they’ll push, and I’ll say no, and they’ll push again, and I’ll say, to them, “Read my lips: no new taxes.” Political scientists, however, have been studying this question for some time, and what they’ve found is that out-and-out high-profile broken pledges like George H. W. Bush’s are the exception, not the rule. That’s what two book-length studies from the 1980s found. Michael Krukones in Promises and Performance: Presidential Campaigns as Policy Predictors (1984) established that about 75 percent of the promises made by presidents from Woodrow Wilson through Jimmy Carter were kept. In Presidents and Promises: From Campaign Pledge to Presidential Performance (1985), Jeff Fishel looked at campaigns from John F. Kennedy through Ronald Reagan. What he found was that presidents invariably attempt to carry out their promises; the main reason some pledges are not redeemed is congressional opposition, not presidential flip-flopping. Similarly, Gerald Pomper studied party platforms, and discovered that the promises parties made were consistent with their postelection agendas. More recent and smaller-scale papers have confirmed the main point: presidents’ agendas are clearly telegraphed in their campaigns.

Richard Fenno’s studies of how members of Congress think about representation are relevant here, even though his research is based on the other side of Pennsylvania Avenue. Fenno, in a series of books beginning with Home Style in 1978, has followed members as they work their districts, and has transcribed what the world looks like through politicians’ eyes. What he has found is that representatives and senators see every election as a cycle that begins in the campaign, when they make promises to their constituents. Then, if they win, they interpret how those promises will constrain them once they’re in office. Once in Washington, Fenno’s politicians act with two things in mind: how their actions match the promises they’ve made in the previous campaign; and how they will be able to explain those actions when they return to their district. Representation “works,” then, because politicians are constantly aware that what they do in Washington will have to be explained to their constituents, and that it will have to be explained in terms of their original promises. Of course, there’s more to it than that; at the presidential level, one of the key ways that campaigns constrain presidents is that the same people who draft the candidate’s proposals usually wind up working on those same issue areas in the White House or the relevant departments and agencies, and they tend to be highly committed to the ideas they authored. And don’t sell short the possibility that candidates themselves are personally committed to the programs they advocate—either because those issues sparked their interest in politics to begin with (and that’s why they were advocating them on the campaign trail), or because it’s just a natural human inclination to start believing your own rhetoric.

#### Their foreign policy philosophies are fundamentally different on the issues that matter for our impacts

Michael O’Hanlon 8-13-2012; Director of Research and Senior Fellow Foreign Policy at Brookings; Obama vs. Romney on Foreign Policy http://www.brookings.edu/research/opinions/2012/08/13-obama-romney-ohanlon

As a whole, Romney proposes a more traditionally realist foreign policy of emphasizing strong relations with allies, toughening policies toward others and building up the armed forces. Obama still seeks a muscular dimension to America’s role in the world — demonstrated most clearly by his commando raids and drone strikes against Al Qaeda. But the president seeks a more moderate tone

and flavor in economic domains as well as policies toward Russia, China and the Muslim world. These differences are big enough set to merit a great deal of attention and debate. Obama and Romney are far from foreign policy carbon copies of each other.

### AT: Israel Strikes

#### Israel will strike after the election – wants support of new president and is still in planning stages

Manuel, 9/4/12 (Stephen, All voices news service, “Israel wont attack Iran before US presidential election, http://www.allvoices.com/contributed-news/12908326-israel-wont-attack-iran-before-us-presidential-election)

For the last couple of months, [Israel](http://www.allvoices.com/people/Israel) has been constantly looking towards the United States for support on striking nuclear facilities of Iran. However, the Obama administration still desires to resolve the crisis through dialogue and negotiations. The administration believes that diplomatic efforts can bring results, as Iranian leaders can be coaxed to halt enrichment of uranium. Israeli Prime Minister [Benjamin Netanyahu](http://www.allvoices.com/people/Benjamin_Netanyahu) and his Defense Minister [Ehud Barak](http://www.allvoices.com/people/Ehud_Barak) have expressed their dismay over the response from the US officials on Iran’s nuclear program. Netanyahu has even publicly said that if the Obama administration does not help Israel to attack Iranian nuclear facilities, the country will proceed on her own.

On the other hand, majority of American officials believe that Israel will not attack Iran before the US presidential election. The US presidential elections are held on [November 6](http://www.allvoices.com/people/November_6) after every four years. Republican and Democrats are trying their best to convince electorates to vote for them. US officials believe that Israel is now waiting for the presidential election to be over because it believes that it will be able to get the support of the United States for an attack on Iran after the election.

US House of Representatives Intelligence Committee Chairman Mike Rogers had already said during the Republican National Convention in Tampa, Florida, that he was confident Israel would not take any action against Iran before the presidential election. Mike Rogers also said that Israel was wisely calculating different aspects of launching an offensive against Iran; therefore, it was unlikely that Israel would strike Iran anytime soon.

## 2nr ITER

### ITER K2 Domestic 2NR

#### ITER participation is critical to domestic fusion -- it bolsters domestic innovation, withdrawal wrecks fusion competitiveness.

James, ‘98

[Thomas, Deputy Home Team Leader of the US ITER Project Office, “ITER Is a Great Opportunity that the U.S. Should Pursue,” Journal of Fusion Energy, Vol. 17, No. 1, Springerlink, p. 43]

Because the world's fusion programs are now focused on ITER, a collapse of the ITER collaboration would have significant effects of the fusion programs of all parties. It would also certainly damage the prospects of future fusion and other megascience collaborations. The U.S. fusion program would probably continue its budget slide and result in a small university plasma physics science program with little relevance to energy. U.S. industry would be severely impacted because ITER is their only vehicle to participate in fusion development, to contribute their skills, and to benefit from the technology development activities of fusion and its spin-off technologies. U.S. industry would also be placed at an impossible disadvantage in comparison with Japanese and European industries, because they will continue to be involved in fusion and they will therefore receive the fusion and spin-off technology benefits. U.S. taxpayers will suffer the greatest loss because, after their investing billions of dollars in fusion development over 40 years, they will still not get an answer to the most fundamental fusion question as to whether the basic magnetic fusion process works and can be controlled. And, they will suffer a further huge loss by virtue of giving the fusion science and technology, that the U.S. were leaders in developing, to the Japanese and Europeans. This would be the ultimate insult to U.S. taxpayers, if the U.S. ends up importing the fusion Power plants and the resulting spin-off technologies from Japan and Europe. The U.S.'s loss from such a development would be inexcusable.

# Quarters – Aff v NU KM

## 1ac

### Plan

#### The United States federal government should substantially increase loan guarantees for energy produced by integral fast reactors using the S-PRISM design in the United States.

### 1

#### Adv 1: Nuclear leadership

#### Nuclear power is inevitable – Inaction on IFRs is killing US nuclear leadership

**Shuster 11** [Joseph Shuster, founder of Minnesota Valley Engineering and Chemical Engineer, 9-8-2011, "Response to Draft Report From Obama’s Blue Ribbon Commission (BRC) on America’s Nuclear Future dated July 29, 2011," Beyond Fossil Fools]

Contrary to the commission’s declarations on the matter, the U.S. is in danger of losing its once ¶ strong nuclear leadership. As a result we would have less to say about how nuclear materials are ¶ to be managed in the world and that could expose the U.S. to some inconvenient if not downright ¶ dangerous consequences. China is now building a large pilot plant said to be identical to our ¶ successful EBR-II plant that proved the design of the IFR. Meanwhile in the U.S. after complete ¶ success, EBR II was shut down, not for technical reasons but for political reasons during the ¶ Clinton administration, a decision destined to be one of the worst in our nation’s history.¶ Much of the world is already committed to a nuclear future with some countries eagerly waiting ¶ to license the American version of Generation IV Fast Reactors—the IFR. We still have the best ¶ IFR technology in the world but have squandered much of our lead, partly by allowing a largely ¶ unqualified commission two years of useless deliberation. What we really did was give our ¶ competitors an additional two years to catch up.

#### IFR restores leadership on nuclear issues – key to contain proliferation

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "IFR FaD context – the need for U.S. implementation of the IFR," 2/18/10) http://bravenewclimate.com/2010/02/18/ifr-fad-context/-http://bravenewclimate.com/2010/02/18/ifr-fad-context/

ON THE NEED FOR U.S. IMPLEMENTATION OF THE INTEGRAL FAST REACTOR¶ The IFR ties into a very big picture — international stability, prevention of war, and avoiding “proliferation” (spread) of nuclear weapons.¶ – The need for energy is the basis of many wars, including the ones we are engaged in right now (Iraq and Afghanistan). If every nation had enough energy to give its people a decent standard of living, that reason for conflict would disappear.¶ – The only sustainable energy source that can provide the bulk of the energy needed is nuclear power.¶ – The current need is for more thermal reactors — the kind we now use.¶ – But for the longer term, to provide the growing amount of energy that will be needed to maintain civilization, the only proven way available today is with fast-reactor technology.¶ – The most promising fast-reactor type is the IFR – metal-fueled, sodium-cooled, with pyroprocessing to recycle its fuel.¶ – Nobody knows yet how much IFR plants would cost to build and operate. Without the commercial-scale demo of the IFR, along with rationalization of the licensing process, any claims about costs are simply hand-waving guesses.¶ \* \* \* \*¶ Background info on proliferation (of nuclear weapons). Please follow the reasoning carefully.¶ – Atomic bombs can be made with highly enriched uranium (90% U-235) or with good-quality plutonium (bomb designers want plutonium that is ~93% Pu-239).¶ – For fuel for an LWR, the uranium only has to be enriched to 3 or 4% U-235.¶ – To make a uranium bomb you don’t need a reactor — but you do need access to an enrichment facility or some other source of highly enriched uranium…¶ – Any kind of nuclear reactor can be used to make weapons-quality plutonium from uranium-238, but the uranium has to have been irradiated for only a very short period. In other words, nobody would try to make a plutonium weapon from ordinary spent fuel, because there are easier ways to get plutonium of much better quality.¶ – Plutonium for a weapon not only has to have good isotopic quality, it also has to be chemically uncontaminated. Thus the lightly irradiated fuel has to be processed to extract the plutonium in a chemically pure form. But mere possession of a reactor is not sufficient for a weapons capability — a facility using a chemical process called PUREX is also needed.¶ – Regardless of how many reactors a country has, it cannot have a weapons capability unless it has either the ability to enrich uranium or to do PUREX-type fuel reprocessing.¶ – Therefore, the spread of weapons capability will be strongly inhibited if the only enrichment and reprocessing facilities are in countries that already have a nuclear arsenal.¶ – But that can only happen if countries with reactors (and soon that will be most of the nations of the world) have absolutely ironclad guarantees that they can get the fuel they need even if they can’t make their own, regardless of how obnoxious their political actions might be.¶ – Such guarantees will have to be backed up by some sort of international arrangement, and that can only come to pass if there is effective leadership for the laborious international negotiations that will have to take place. (For a relevant discussion, see here)¶ – At present, the only nation that has a realistic potential to be such a leader is the United States.¶ – But a country cannot be such a leader in the political arena unless it is also in the technological forefront.¶ – The United States used to be the reactor-technology leader, but it abandoned that role in 1994 when it terminated the development of the IFR.¶ – Since then, other nations — China, India, Japan, South Korea, Russia, France — have proceeded to work on their own fast-reactor versions, which necessarily will involve instituting a fuel-processing capability.¶ – Thus the United States is being left behind, and is rapidly losing its ability to help assure that the global evolution of the technology of nuclear energy proceeds in a safe and orderly manner.¶ – But maybe it’s not too late yet. After all, the IFR is the fast-reactor technology with the post promise (for a variety of reasons), and is ready for a commercial-scale demonstration to settle some uncertainties about how to scale up the pyroprocess as needed, to establish better limits on the expected cost of production units, and to develop an appropriate, expeditious licensing process.¶ – Such a demo will require federal seed money. It’s time to get moving.

#### Several impacts – 1st prolif

#### Transition to IFRs create a global proliferation resistant fuel cycle

**Stanford 10** (Dr George S. Stanford, nuclear reactor physicist, retired from Argonne National Laboratory, "Q%26A on Integral Fast Reactors – safe, abundant, non-polluting power," 9/18/10) <http://bravenewclimate.com/2010/09/18/ifr-fad-7/-http://bravenewclimate.com/2010/09/18/ifr-fad-7/>

Thermal reactors with reprocessing would do at least a little better.¶ Recycling (it would be with the PUREX process, or an equivalent) could stretch the U-235 supply another few decades—but remember the consequences: growing stockpiles of plutonium, pure plutonium streams in the PUREX plants, and the creation of 100,000-year plutonium mines.¶ If you’re going to talk about “PUREX” and “plutonium mines” you should say what they are. First, what’s PUREX?¶ It’s a chemical process developed for the nuclear weapons program, to separate plutonium from everything else that comes out of a reactor. Weapons require very pure plutonium, and that’s what PUREX delivers. The pyroprocess used in the IFR is very different. It not only does not, it cannot, produce plutonium with the chemical purity needed for weapons.¶ Why do you keep referring to “chemical” purity?¶ Because chemical and isotopic quality are two different things. Plutonium for a weapon has to be pure chemically. Weapons designers also want good isotopic quality—that is, they want at least 93% of their plutonium to consist of the isotope Pu- 239. A chemical process does not separate isotopes.¶ I see. Now, what about the “plutonium mines?”¶ When spent fuel or vitrified reprocessing waste from thermal reactors is buried, the result is a concentrated geological deposit of plutonium. As its radioactivity decays, those deposits are sources of raw material for weapons, becoming increasingly attractive over the next 100,000 years and more (the half-life of Pu-239 being 24,000 years).¶ You listed, back at the beginning, some problems that the IFR would ameliorate. A lot of those problems are obviously related to proliferation of nuclear weapons.¶ Definitely. For instance, although thermal reactors consume more fuel than they produce, and thus are not called “breeders,” they inescapably are prolific breeders of plutonium, as I said. And that poses serious concerns about nuclear proliferation. And proliferation concerns are even greater when fuel from thermal reactors is recycled, since the PUREX method is used. IFRs have neither of those drawbacks.¶ Why does it seem that there is more proliferation-related concern about plutonium than about uranium? Can’t you make bombs from either?¶ Yes. The best isotopes for nuclear explosives are U-235, Pu- 239, and U-233. Only the first two of those, however, have been widely used. All the other actinide isotopes, if present in appreciable quantity, in one way or another complicate the design and construction of bombs and degrade their performance. Adequate isotopic purity is therefore important, and isotopic separation is much more difficult than chemical separation. Even so, with plutonium of almost any isotopic composition it is technically possible to make an explosive (although designers of military weapons demand plutonium that is at least 93% Pu-239), whereas if U-235 is sufficiently diluted with U-238 (which is easy to do and hard to undo), the mixture cannot be used for a bomb.¶ High-quality plutonium is the material of choice for a large and sophisticated nuclear arsenal, while highly enriched uranium would be one of the easier routes to a few crude nuclear explosives.¶ So why the emphasis on plutonium?¶ You’re asking me to read people’s minds, and I’m not good at that. Both uranium and plutonium are of proliferation concern.¶ Where is the best place for plutonium?¶ Where better than in a reactor plant—particularly an IFR facility, where there is never pure plutonium (except some, briefly, when it comes in from dismantled weapons), where the radioactivity levels are lethal, and where the operations are done remotely under an inert, smothering atmosphere? Once enough IFRs are deployed, there never will need to be plutonium outside a reactor plant—except for the then diminishing supply of plutonium left over from decades of thermal-reactor operation.¶ How does the IFR square with U.S. policy of discouraging plutonium production, reprocessing and use?¶ It is entirely consistent with the intent of that policy—to render plutonium as inaccessible for weapons use as possible. The wording of the policy, however, is now obsolete.¶ How so?¶ It was formulated before the IFR’s pyroprocessing and electrorefining technology was known—when “reprocessing” was synonymous with PUREX, which creates plutonium of the chemical purity needed for weapons. Since now there is a fuel cycle that promises to provide far-superior management of plutonium, the policy has been overtaken by events.¶ Why is the IFR better than PUREX? Doesn’t “recycling” mean separation of plutonium, regardless of the method?¶ No, not in the IFR—and that misunderstanding accounts for some of the opposition. The IFR’s pyroprocessing and electrorefining method is not capable of making plutonium that is pure enough for weapons. If a proliferator were to start with IFR material, he or she would have to employ an extra chemical separation step.¶ But there is plutonium in IFRs, along with other fissionable isotopes. Seems to me that a proliferator could take some of that and make a bomb.¶ Some people do say that, but they’re wrong, according to expert bomb designers at Livermore National Laboratory. They looked at the problem in detail, and concluded that plutonium-bearing material taken from anywhere in the IFR cycle was so ornery, because of inherent heat, radioactivity and spontaneous neutrons, that making a bomb with it without chemical separation of the plutonium would be essentially impossible—far, far harder than using today’s reactor-grade plutonium.¶ So? Why wouldn’t they use chemical separation?¶ First of all, they would need a PUREX-type plant—something that does not exist in the IFR cycle.¶ Second, the input material is so fiendishly radioactive that the processing facility would have to be more elaborate than any PUREX plant now in existence. The operations would have to be done entirely by remote control, behind heavy shielding, or the operators would die before getting the job done. The installation would cost millions, and would be very hard to conceal.¶ Third, a routine safeguards regime would readily spot any such modification to an IFR plant, or diversion of highly radioactive material beyond the plant.¶ Fourth, of all the ways there are to get plutonium—of any isotopic quality—this is probably the all-time, hands-down hardest.¶ The Long Term¶ Does the plutonium now existing and being produced by thermal reactors raise any proliferation concerns for the long term?¶ It certainly does. As I said earlier, burying the spent fuel from today’s thermal reactors creates geological deposits of plutonium whose desirability for weapons use is continually improving. Some 30 countries now have thermal-reactor programs, and the number will grow. To conceive of that many custodial programs being maintained effectively for that long is a challenge to the imagination. Since the IFR can consume plutonium, it can completely eliminate this long-term concern.¶ Are there other waste-disposal problems that could be lessened?¶ Yes. Some constituents of the waste from thermal reactors remain appreciably radioactive for thousands of years, leading to 10,000-year stability criteria for disposal sites. Waste disposal would be simpler if that time frame could be shortened. With IFR waste, the time of concern is less than 500 years.¶ What about a 1994 report by the National Academy of Sciences? The Washington Post said that the NAS report “denounces the idea of building new reactors to consume plutonium.”¶ That characterization of the report is a little strong, but it is true that the members of the NAS committee seem not to have been familiar with the plutonium-management potential of the IFR. They did, however, recognize the “plutonium mine” problem. They say (Executive Summary, p.3):¶ Because plutonium in spent fuel or glass logs incorporating high-level wastes still entails a risk of weapons use, and because the barrier to such use diminishes with time as the radioactivity decays, consideration of further steps to reduce the long-term proliferation risks of such materials is required, regardless of what option is chosen for [near-term] disposition of weapons plutonium. This global effort should include continued consideration of more proliferation-resistant nuclear fuel cycles, including concepts that might offer a long-term option for nearly complete elimination of the world’s plutonium stocks. The IFR, obviously, is just such a fuel cycle—a prime candidate for “continued consideration.”

#### We’re on the brink of rapid prolif – access to tech is inevitable and multilateral institutions fail

**CFR 12** [CFR 7-5-2012, "The Global Nuclear Nonproliferation Regime," Council on Foreign Relations]

Nuclear weapons proliferation, whether by state or nonstate actors, poses one of the greatest threats to international security today. Iran's apparent efforts to acquire nuclear weapons, what amounts to North Korean nuclear blackmail, and the revelation of the A.Q. Khan black market nuclear network all underscore the far-from-remote possibility that a terrorist group or a so-called rogue state will acquire weapons of mass destruction or materials for a dirty bomb.¶ The problem of nuclear proliferation is global, and any effective response must also be multilateral. Nine states (China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom, and the United States) are known or believed to have nuclear weapons, and more than thirty others (including Japan, Germany, and South Korea) have the technological ability to quickly acquire them. Amid volatile energy costs, the accompanying push to expand nuclear energy, growing concerns about the environmental impact of fossil fuels, and the continued diffusion of scientific and technical knowledge, access to dual-use technologies seems destined to grow.¶ In the background, a nascent global consensus regarding the need for substantial nuclear arms reductions, if not complete nuclear disarmament, has increasingly taken shape. In April 2009, for instance, U.S. president Barack Obama reignited global nonproliferation efforts through a landmark speech in Prague. Subsequently, in September of the same year, the UN Security Council (UNSC) unanimously passed Resolution 1887, which called for accelerated efforts toward total nuclear disarmament. In February 2012, the number of states who have ratified the Comprehensive Test Ban Treaty increased to 157, heightening appeals to countries such as the United States, Israel, and Iran to follow suit.¶ Overall, the existing global nonproliferation regime is a highly developed example of international law. Yet, despite some notable successes, existing multilateral institutions have failed to prevent states such as India, Pakistan, and North Korea from "going nuclear," and seem equally ill-equipped to check Iran as well as potential threats from nonstate, terrorist groups. The current framework must be updated and reinforced if it is to effectively address today's proliferation threats, let alone pave the way for "the peace and security of a world without nuclear weapons."

#### New proliferators will be uniquely destabilizing -- guarantees conflict escalation.

Cimbala, ‘8

[Stephen, Distinguished Prof. Pol. Sci. – Penn. State Brandywine, Comparative Strategy, “Anticipatory Attacks: Nuclear Crisis Stability in Future Asia”, 27, InformaWorld]

If the possibility existed of a mistaken preemption during and immediately after the Cold War, between the experienced nuclear forces and command systems of America and Russia, then it may be a matter of even more concern with regard to states with newer and more opaque forces and command systems. In addition, the Americans and Soviets (and then Russians) had a great deal of experience getting to know one another’s military operational proclivities and doctrinal idiosyncrasies, including those that might influence the decision for or against war. Another consideration, relative to nuclear stability in the present century, is that the Americans and their NATO allies shared with the Soviets and Russians a commonality of culture and historical experience. Future threats to American or Russian security from weapons of mass destruction may be presented by states or nonstate actors motivated by cultural and social predispositions not easily understood by those in the West nor subject to favorable manipulation during a crisis. The spread of nuclear weapons in Asia presents a complicated mosaic of possibilities in this regard. States with nuclear forces of variable force structure, operational experience, and command-control systems will be thrown into a matrix of complex political, social, and cultural crosscurrents contributory to the possibility of war. In addition to the existing nuclear powers in Asia, others may seek nuclear weapons if they feel threatened by regional rivals or hostile alliances. Containment of nuclear proliferation in Asia is a desirable political objective for all of the obvious reasons. Nevertheless, the present century is unlikely to see the nuclear hesitancy or risk aversion that marked the Cold War, in part, because the military and political discipline imposed by the Cold War superpowers no longer exists, but also because states in Asia have new aspirations for regional or global respect.12 The spread of ballistic missiles and other nuclear-capable delivery systems in Asia, or in the Middle East with reach into Asia, is especially dangerous because plausible adversaries live close together and are already engaged in ongoing disputes about territory or other issues.13 The Cold War Americans and Soviets required missiles and airborne delivery systems of intercontinental range to strike at one another’s vitals. But short-range ballistic missiles or fighter-bombers suffice for India and Pakistan to launch attacks at one another with potentially “strategic” effects. China shares borders with Russia, North Korea, India, and Pakistan; Russia, with China and NorthKorea; India, with Pakistan and China; Pakistan, with India and China; and so on. The short flight times of ballistic missiles between the cities or military forces of contiguous states means that very little time will be available for warning and attack assessment by the defender. Conventionally armed missiles could easily be mistaken for a tactical nuclear first use. Fighter-bombers appearing over the horizon could just as easily be carrying nuclear weapons as conventional ordnance. In addition to the challenges posed by shorter flight times and uncertain weapons loads, potential victims of nuclear attack in Asia may also have first strike–vulnerable forces and command-control systems that increase decision pressures for rapid, and possibly mistaken, retaliation. This potpourri of possibilities challenges conventional wisdom about nuclear deterrence and proliferation on the part of policymakers and academic theorists. For policymakers in the United States and NATO, spreading nuclear and other weapons of mass destruction in Asia could profoundly shift the geopolitics of mass destruction from a European center of gravity (in the twentieth century) to an Asian and/or Middle Eastern center of gravity (in the present century).14 This would profoundly shake up prognostications to the effect that wars of mass destruction are now passe, on account of the emergence of the “Revolution in Military Affairs” and its encouragement of information-based warfare.15 Together with this, there has emerged the argument that large-scale war between states or coalitions of states, as opposed to varieties of unconventional warfare and failed states, are exceptional and potentially obsolete.16 The spread of WMD and ballistic missiles in Asia could overturn these expectations for the obsolescence or marginalization of major interstate warfare.

#### Extinction.

Krieger, ‘9

[David, Pres. Nuclear Age Peace Foundation and Councilor – World Future Council, “Still Loving the Bomb After All These Years”, 9-4, https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger]

Jonathan Tepperman’s article in the September 7, 2009 issue of Newsweek, “Why Obama Should Learn to Love the Bomb,” provides a novel but frivolous argument that nuclear weapons “may not, in fact, make the world more dangerous….” Rather, in Tepperman’s world, “The bomb may actually make us safer.” Tepperman shares this world with Kenneth Waltz, a University of California professor emeritus of political science, who Tepperman describes as “the leading ‘nuclear optimist.’” Waltz expresses his optimism in this way: “We’ve now had 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Actually, there were a number of proxy wars between nuclear weapons states, such as those in Korea, Vietnam and Afghanistan, and some near disasters, the most notable being the 1962 Cuban Missile Crisis. Waltz’s logic is akin to observing a man falling from a high rise building, and noting that he had already fallen for 64 floors without anything bad happening to him, and concluding that so far it looked so good that others should try it. Dangerous logic! Tepperman builds upon Waltz’s logic, and concludes “that all states are rational,” even though their leaders may have a lot of bad qualities, including being “stupid, petty, venal, even evil….” He asks us to trust that rationality will always prevail when there is a risk of nuclear retaliation, because these weapons make “the costs of war obvious, inevitable, and unacceptable.” Actually, he is asking us to do more than trust in the rationality of leaders; he is asking us to gamble the future on this proposition. “The iron logic of deterrence and mutually assured destruction is so compelling,” Tepperman argues, “it’s led to what’s known as the nuclear peace….” But if this is a peace worthy of the name, which it isn’t, it certainly is not one on which to risk the future of civilization. One irrational leader with control over a nuclear arsenal could start a nuclear conflagration, resulting in a global Hiroshima. Tepperman celebrates “the iron logic of deterrence,” but deterrence is a theory that is far from rooted in “iron logic.” It is a theory based upon threats that must be effectively communicated and believed. Leaders of Country A with nuclear weapons must communicate to other countries (B, C, etc.) the conditions under which A will retaliate with nuclear weapons. The leaders of the other countries must understand and believe the threat from Country A will, in fact, be carried out. The longer that nuclear weapons are not used, the more other countries may come to believe that they can challenge Country A with impunity from nuclear retaliation. The more that Country A bullies other countries, the greater the incentive for these countries to develop their own nuclear arsenals. Deterrence is unstable and therefore precarious. Most of the countries in the world reject the argument, made most prominently by Kenneth Waltz, that the spread of nuclear weapons makes the world safer. These countries joined together in the Nuclear Non-Proliferation Treaty (NPT) to prevent the spread of nuclear weapons, but they never agreed to maintain indefinitely a system of nuclear apartheid in which some states possess nuclear weapons and others are prohibited from doing so. The principal bargain of the NPT requires the five NPT nuclear weapons states (US, Russia, UK, France and China) to engage in good faith negotiations for nuclear disarmament, and the International Court of Justice interpreted this to mean complete nuclear disarmament in all its aspects. Tepperman seems to be arguing that seeking to prevent the proliferation of nuclear weapons is bad policy, and that nuclear weapons, because of their threat, make efforts at non-proliferation unnecessary and even unwise. If some additional states, including Iran, developed nuclear arsenals, he concludes that wouldn’t be so bad “given the way that bombs tend to mellow behavior.” Those who oppose Tepperman’s favorable disposition toward the bomb, he refers to as “nuclear pessimists.” These would be the people, and I would certainly be one of them, who see nuclear weapons as presenting an urgent danger to our security, our species and our future. Tepperman finds that when viewed from his “nuclear optimist” perspective, “nuclear weapons start to seem a lot less frightening.” “Nuclear peace,” he tells us, “rests on a scary bargain: you accept a small chance that something extremely bad will happen in exchange for a much bigger chance that something very bad – conventional war – won’t happen.” But the “extremely bad” thing he asks us to accept is the end of the human species. Yes, that would be serious. He also doesn’t make the case that in a world without nuclear weapons, the prospects of conventional war would increase dramatically. After all, it is only an unproven supposition that nuclear weapons have prevented wars, or would do so in the future. We have certainly come far too close to the precipice of catastrophic nuclear war. As an ultimate celebration of the faulty logic of deterrence, Tepperman calls for providing any nuclear weapons state with a “survivable second strike option.” Thus, he not only favors nuclear weapons, but finds the security of these weapons to trump human security. Presumably he would have President Obama providing new and secure nuclear weapons to North Korea, Pakistan and any other nuclear weapons states that come along so that they will feel secure enough not to use their weapons in a first-strike attack. Do we really want to bet the human future that Kim Jong-Il and his successors are more rational than Mr. Tepperman?

#### Second – competitiveness

#### US is ceding nuclear competitiveness now – plan key to resolve

**Barton 11** [Charles Barton, Nuclear Green, “Have the Chinese Been Reading Energy from Thorium or Nuclear Green?” 1/31/11]

Last week the Chinese Academy of Science announced that it planned to finance the development of a Chinese Thorium Breeding Molten Salt Reactor (TMSR) or as it is called in the United States, the Liquid Fluoride Thorium Reactor (LFTR). The announcement came in a news report from Weihui.news365.com.cn. The announcement was relayed to Westerners who were interested in Thorium breeding molten salt reactors in a discussion thread comment posted by Chinese Scientist Hua Bai, last Friday. Kirk Sorensen, Brian Wang, and I all posted about Bai's announcement on Sunday, January 30.¶ In addition to these posts, the thread which Hua Bai started contains the revelation that the engineer who heads the Chinese Molten Salt Reactor Project is none other than Jiang Mianheng, a son of Retired Chinese President, Jiang Zemin. In addition to being President of People's China, Jiang was the chairmanship of the powerful Central Military Commission, suggesting the likelihood that Jiang Mianheng has military ties. He is the cofounder of Semiconductor Manufacturing International Corporation, and a former lead researcher in the Chinese Space Program, as well as Vice President of the Chinese Academy of Sciences. The presence of such a well connected Chinese science leader suggests that the Chinese TMSR project is regarded as important by the Chinese leadership. Thus the Chinese leadership, unlike the American Political andscientific leadership has grasped the potential of molten salt nuclear technology.¶ Yesterday, "horos11" commented on my blog, Nuclear Green,¶ I read this, and I didn't know whether to laugh or cry.¶ After all, this site and others have been sounding the clarion call to action on this, and I should be glad that someone finally heeded it and its getting traction in a place that really matters, but I have a sinking feeling that:¶ a. its going to take far less than their planned 20 years¶ b. they are going to succeed beyond their wildest expectations.¶ Which means that the next, giant sucking sound we may hear is the sound of the 5 trillion dollar energy market heading east, further depressing our economy, weakening the dollar (and the euro) and ultimately making the US economy dependent on rescue from the chinese in the future (when they are done rescuing themselves).¶ Yet, in the large scheme of things, this is a definite good, and may be our savior from anthropomorphic climate change.¶ so again, laugh? or cry. I guess its up to how you view things - I guess I'm tentatively laughing at the moment, but mostly from the overwhelming irony of all this.¶ Jason Ribeiro added,¶ I can't help but have a feeling of sour grapes about this. While I congratulate China for doing the obvious, America has its head buried so far in the sand it can't see straight. With all the internet clamor about LFTR that's been going on the internet in the past 3-4 years, it was the non-English speaking Chinese that finally got the message that this was a great idea worth investing in. Our leadership ought to be ashamed of themselves.¶ The Chinese News story on the Thorium Molten Salt Reactor reflects the clear Chinese thinking about the potential role of LFTRs in the future Chinese energy economy. I will paraphrase,¶ "the future of advanced nuclear fission energy - nuclear energy, thorium-based molten salt reactor system" project was officially launched. . . The scientific goal is to developed a new generation of nuclear energy systems [and to achieve commercial] use [in] 20 years or so. We intend to complete the technological research needed for this system and to assert intellectual property rights to this technology. Fossil fuel energy is being depleted, and solar and wind energy are not stable enough, while hydropower development has reached the limit of its potential.. . .¶ Nuclear power seems to offer us a very attractive future energy choice, high energy density, low carbon emissions, and the potential for sustainable development. . . . China has chosen {to make an energy] breakthrough in the direction of molten salt reactors. . . . this liquid fuel reactors has a simple structure and can run at atmospheric pressure, [it can use any fissionable material as fuel} and has other advantages. "This new stove" can be made very small, will operate with stabile nuclear fuel, and will run for several decades before replacement. After the thorium is completely used in the nuclear process the TMSR will produce nuclear waste will be only be one-thousandth of that produced by existing nuclear technologies.¶ As the world is still in the development of a new generation of nuclear reactors, the thorium-based independent research and development of molten salt reactors, will be possible to obtain all intellectual property rights. This will enable China to firmly grasp the lifeline of energy in their own hands.¶ Let the word "nuclear" no longer mean war.¶ In the past, people always talk about "core" colors. The Hiroshima atomic bomb, the Chernobyl nuclear power plant explosion, these are like a lingering nightmare that is marked in human history. But a new generation of nuclear power will take the color green, the mark of peace taking human beings into a new era.¶ Oh Wow! It sounds as if someone in China has been reading Nuclear Green or Energy from Thorium. And there is more!¶ In addition, the "new stove" operating at atmospheric pressure operation, rather than the traditional reactor operating at high pressure, will be simple and safe. "When the furnace temperature exceeds a predetermined value, in the bottom of the MSR core, a frozen plug of salt will automatically melt, releasing the liquid salt in the reactor core into an emergency storage tanks, and terminating the nuclear reaction," scientist Xu Hongjie told reporters, as the cooling agent is fluoride salts (the same salts that also carrying the nuclear fuel), after the liquid salt cools it turns solid, which prevents the nuclear fuel from leaking out of its containment, and thus will not pollute ground water causing an ecological disasters. The added safety opens up new possibilities for reactors, they can be built underground, completely isolating radioactive materials from the reactor, also the underground location will protect the reactor from an enemy's weapon attack. Reactors can be built in large cities, in the wilderness, or in remote villages.¶ Well Kirk Sorensen and I wanted our ideas to become national priorities. We just did not know in what country it would happen first. Unfortunately the leadership of the United States, continues to be determined to lead this nation into the wilderness of powerlessness, while the leadership of communist China is alert to the possibilities of a new energy age. Possibilities that can be realized by molten salt nuclear technology. Lets hope that someone in the White House or Congress wakes up. The Chinese understand the implications of their venture into Molten Salt nuclear technology. The American leadership does not.

#### Ceding nuclear leadership creates an energy disadvantage vis a vi other countries, destroys perception of competitiveness

**Barton 10** (Charles Barton, Nuclear Green "Keeping up with China: The Economic Advantage of Molten Salt Nuclear Technology," 12/1/10)

American and European nuclear development can either proceed by following the cost lowering paths being pioneered in Asia, or begin to develop low cost innovative nuclear plans. Since low labor costs, represent the most significant Chinese and Indian cost advantage, it is unlikely that European and American reactor manufacturers will be able to compete with the Asians on labor costs. Labor costs for conventional reactors can be lowered by factory construction of reactor componant moduels, but the Chinese are clearly ahead of the West in that game. Yet the weakness of the Chinese system is the relatively large amount of field labor that the manufacture of large reactors requires.¶ The Chines system is to introduce labor saving devices where ever and when ever possible, but clearly shifting labor from the field to a factory still offers cost advantages. The more labor which can be performed in the factory, the more labor cost savings are possible. Other savings advantages are possible by simplifying reactor design, and lowering materials input. Building a reactor with less materials and fewer parts lowers nuclear costs directly and indirectly. Decreasing core size per unit of power output also can contribute a cost advantage. Direct saving relate to the cost of parts and matetials, but fewer parts and less material also means less labor is required to put things together, since there is less to put together. In addition a small reactor core structure, would, all other things being equal, require a smaller housing. Larger cores mean more structural housing expenses.¶ While the Pebel Bed Modular Reactor has a relatively simple core design, the actual core is quite large, because of the cooling inefficiency of helium. Thus, the simplisity of the PBMR core is ballanced by its size, its total materials input, and the size of its housing. The large core and housing requirements of the PBMR also adds to its labor costs, especially its field labor cost. Thus while the simplisity of the PBMR core design would seem to suggest a low cost, this expectation is unlikely to br born out in practice.¶ Transportation limits ability to shift production from the field to the factory. An analysis preformed by the University of Tennessee's, and the Massachusettes Institute of Technology's Departments of Nuclear Engineering looked at the 335 MW Westinghouse IRIS reactor. The analysis found,¶ A rough estimate of the weight for a 1000 MWt modular reactor and its secondary system, similar to the Westinghouse IRIS plant, is taken as the summation of all of the major components in the analysis. Many of the smaller subcomponents have been neglected. The containment structure contributes ~2.81E6 kg (3100 tons). The primary reactor vessel and the turbo-generator contribute ~1.45E6 kg (1600 tons) each. The heat exchange equipment and piping contribute ~6.78E5 kg (747 tons). Therefore, the total weight of the major plant components is~ 6.39E6 kg (7047 tons).¶ The weight and width of the IRIS would place constraints of barge transportation of the IRIS on the Tennessee and Ohio Rivers. The report stated,¶ The Westinghouse barge mounted IRIS reactor modules were limited in size based on input from the University of Tennessee. The barge dimension limitations were established to be 30 meters (98’-5”) wide, 100 meters (328’-1”) long, with a 2.74 meter (9’) draft. These dimensions establish the barge maximum displacement at 8,220 metric tons. In addition, the barge(s) are limited to ~20 meters (65’-7”) in height above the water surface, so that they fit under crossing bridges and can be floated up the Mississippi, Ohio, and Tennessee Rivers as far as the city of Chattanooga, Tennessee. Further movement above Chattanooga is currently limited by the locks at the Chickamauga Reservoir dam.¶ The above barge displacement limitation will impose severe limits on how much structural support and shield concrete can be placed in the barge modules at the shipyard. For example, the estimated weight of concrete in the IRIS containment and the surrounding cylindrical shield structure alone greatly exceeds the total allowable barge displacement. This however does not mean that barge- mounted pressurized water reactors (PWRs) are not feasible. It does mean that barge-mounted PWRs need to employ steel structures that are then used as the forms for the addition of needed concrete after the barge has been floated into its final location and founded.¶ Thus for the IRIS, barge transportation presented problems, and rail transportation was unthinkable. The core of the 125 MW B&W mPower reactor is rail transportable, but final onsite mPower assembly/construction became a significant undertaking, with a consequent increase in overall cost. The core unit does include a pressure vessel and heat exchange mounted above the actual reactor, but many other mPower component modules must be transported seperately and assembled on site.¶ The IIRIS project demonstrates the unlikelihood of whole small reactors being transported to the field ready for energy production without some field construction. This might be possible, however, for mini reactors that are two small to be viewed as a plausible substitute for the fossil fuel powered electrical plants currently supplying electricity for the grid. This then leaves us with¶ with a gap between the cost savings potential of factory manufacture, and the costly process of onsite assembly. B&W the manufacturers of the small 125 MW MPower reactor still has not clarified what percentage of the manufacturing process would be factory based. It is clear, however that B&W knows where it is comming from and what its problems are, as Rod Adams tells us:¶ I spoke in more detail to Chris Mowry and listened as he explained how his company's research on the history of the nuclear enterprise in the US had revealed that 30% of the material and labor cost of the existing units came from the supplied components while 70% was related to the site construction effort. He described how the preponderance of site work had influenced the cost uncertainty that has helped to discourage new nuclear plant construction for so many years.¶ What Mowey did not tell Adams is what percentage of the materials and labor costs will be shifted to the factory as mPower reactors are produced. There have been hints that a significant percentage of the mPower manufacturing process, perhaps as much as 50% will still take place on site. B&W still is working on the design of their manufacturing process, and thus do not yet know all of the details. Clearly then more work needs to be done on controlling onsite costs.¶ Finally, a shift to advanced technology will can lower manufacturing costs. Compared to Light Water reactors, Liquid metal cooled reactors use less material and perhaps less labor, but pool type liqiod metal reactors are not compact. Compared to Liquid Metal cooled reactors, Molten Salt cooled reactor will have more compact cores. Shifting to closed cycle gas turbines will decrease construction costs. The added safety of Molten Salt cooled reactors will increase reactor simplification, and thus further lower labor and materials related construction costs.¶ The recycling of old power plant locations will also offer some savings. Decreasing manufacturing time will lower interest costs. ¶ All in all there are a lot of reasons to expect lower nuclear manufacturing costs with Generation IV nuclear power plants, and at present no one has come up with a good reason for expecting Molten Salt cooled reactors to cost more than traditional NPPs. The argument, however, is not iron clad. Even if no one has pointed out plasuible errors in it, we need to introduce the caviot that expectations frenquently are not meet. It is possible, for example that the NRC might impose unreasonable expectations on molten salt cooled reactors. Demanding, for example, that they include the same safety features as LWRs, even though they do not have many LWR safety problems. But the potential savings on the cost of energy by adopting molten salt nuclear technology is substantial, and should not be ignored. ¶ To return to the problem posed by Brian Wang, the problem of lower Asian nuclear construction costs. If Europe and the United States cannot meet the Asican energy cost challenge, their economies will encounter a significant decline. Because of Labor cost advantages, it is unlikely that Generation III nuclear plants will ever cost less to build in the United States or Europe than in Asia. in order to keep the American and European economies competitive, the United States and Europe must adopt a low cost, factory manufactured nuclear technology. Molten Salt nuclear technology represents the lowest cost approach, and is highly consistent with factory manufacture and other cost lowering approaches. Couple to that the outstanding safety of molten salt nuclear technology, the potential for dramatically lowering the creation of nuclear waste, and the obsticles to nuclear proliferation posed by molten salt nuclear rechnology, and we see a real potential for keeping the American and European economies competitive, at least as far as energy costs are concerned.

#### That prevents great power wars – perception is key

**Baru 9** - Visiting Professor at the Lee Kuan Yew School of Public Policy in Singapore (Sanjaya, “Year of the power shift?,”

http://www.india-seminar.com/2009/593/593\_sanjaya\_baru.htm

**T**here is no doubt that economics alone will not determine the balance of global power, but there is no doubt either that economics has come to matter for more.¶ The management of the economy, and of the treasury, has been a vital aspect of statecraft from time immemorial. Kautilya’s *Arthashastra* says, ‘From the strength of the treasury the army is born. …men without wealth do not attain their objectives even after hundreds of trials… Only through wealth can material gains be acquired, as elephants (wild) can be captured only by elephants (tamed)… A state with depleted resources, even if acquired, becomes only a liability.’4 Hence, economic policies and performance do have strategic consequences.5¶ In the modern era, the idea that strong economic performance is the foundation of power was argued most persuasively by historian Paul Kennedy. ‘Victory (in war),’ Kennedy claimed, ‘has repeatedly gone to the side with more flourishing productive base.’6 Drawing attention to the interrelationships between economic wealth, technological innovation, and the ability of states to efficiently mobilize economic and technological resources for power projection and national defence, Kennedy argued that nations that were able to better combine military and economic strength scored over others.¶ ‘The fact remains,’ Kennedy argued, ‘that all of the major shifts in the world’s *military-power* balance have followed alterations in the *productive* balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the major Great Power wars, where victory has always gone to the side with the greatest material resources.’7¶ **I**n Kennedy’s view the geopolitical consequences of an economic crisis or even decline would be transmitted through a nation’s inability to find adequate financial resources to simultaneously sustain economic growth and military power – the classic ‘guns vs butter’ dilemma.¶ Apart from such fiscal disempowerment of the state, economic under-performance would also reduce a nation’s attraction as a market, a source of capital and technology, and as a ‘knowledge power’. As power shifted from Europe to America, so did the knowledge base of the global economy. As China’s power rises, so does its profile as a ‘knowledge economy’.¶ Impressed by such arguments the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China’s political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.8¶ While China’s impressive economic performance and the consequent rise in China’s global profile has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington DC. We must expect a revival of interest in Kennedy’s arguments in the current context.¶ **A** historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the ‘square of power’ as the tax bureaucracy, the parliament, the national debt and the central bank. These four institutions of ‘fiscal empowerment’ of the state enable nations to project power by mobilizing and deploying financial resources to that end.9 ¶ Ferguson shows how vital sound economic management is to strategic policy and national power. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet empires and that of the United States of America. In an early comment on the present financial crisis, Ferguson wrote:¶ ‘We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US… It remains to be seen how quickly today’s financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America’s quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors*. …*as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient Oriental empires (not only the Ottoman but also the Persian and Chinese) to Western Europe. Today the shift is from the US – and other western financial centres – to the autocracies of the Middle East and East Asia.’10 ¶ An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union the financial crunch caused by the Afghan war came on top of years of economic under-performance and the loss of political legitimacy of the Soviet state. In a democratic society like the United States the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet state was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it.¶ Hence, one must not become an economic determinist and historic parallels need not always be relevant. Politics can intervene and offer solutions. Political economy and politics, in the form of Keynesian economics and the ‘New Deal’, did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today’s America remains to be seen.

#### Independently key to heg

**Gelb, 10** - currently president emeritus of the Council on Foreign Relations, (Leslie, Fashioning a Realistic Strategy for the Twenty-First Century,” Fletcher Forum of World Affairs vol.34:2 summer 2010 http://fletcher.tufts.edu/forum/archives/pdfs/34-2pdfs/Gelb.pdf)

**LESLIE H. GELB:** Power is what it always has been. It is the ability to get someone to do something they do not want to do by means of your resources and your position. It was always that. There is no such thing in my mind as “soft” power or “hard” power or “smart” power or “dumb” power. It is people who are hard or soft or smart or dumb. Power is power. And people use it wisely or poorly. Now, what has changed is the composition of power in international affairs. For almost all of history, international power was achieved in the form of military power and military force. Now, particularly in the last fifty years or so, it has become more and more economic. So power consists of economic power, military power, and diplomatic power, but the emphasis has shifted from military power (for almost all of history) to now, more economic power. And, as President Obama said in his West Point speech several months ago, our economy is the basis of our international power in general and our military power in particular. That is where it all comes from. Whether other states listen to us and act on what we say depends a good deal on their perception of the strength of the American economy. A big problem for us in the last few years has been the perception that our economy is in decline.

#### Heg solves extinction

**Barnett 2011** – Former Senior Strategic Researcher and Professor in the Warfare Analysis & Research Department, Center for Naval Warfare Studies, U.S. Naval War College, worked as the Assistant for Strategic Futures in the Office of Force Transformation in the DOD (3/7, Thomas, World Politics Review, “The New Rules: Leadership Fatigue Puts U.S., and Globalization, at Crossroads”, <http://www.worldpoliticsreview.com/articles/8099/the-new-rules-leadership-fatigue-puts-u-s-and-globalization-at-crossroads>, credit to LDK)

Events in Libya are a further reminder for Americans that we stand at a crossroads in our continuing evolution as the world's sole full-service superpower. Unfortunately, we are increasingly seeking change without cost, and shirking from risk because we are tired of the responsibility. We don't know who we are anymore, and our president is a big part of that problem. Instead of leading us, he explains to us. Barack Obama would have us believe that he is practicing strategic patience. But many experts and ordinary citizens alike have concluded that he is actually beset by strategic incoherence -- in effect, a man overmatched by the job.  It is worth first examining the larger picture: We live in a time of arguably the greatest structural change in the global order yet endured, with this historical moment's most amazing feature being its relative and absolute lack of mass violence. That is something to consider when Americans contemplate military intervention in Libya, because if we do take the step to prevent larger-scale killing by engaging in some killing of our own, we will not be adding to some fantastically imagined global death count stemming from the ongoing "megalomania" and "evil" of American "empire." We'll be engaging in the same sort of system-administering activity that has marked our stunningly successful stewardship of global order since World War II.  Let me be more blunt: As the guardian of globalization, the U.S. military has been the greatest force for peace the world has ever known. Had America been removed from the global dynamics that governed the 20th century, the mass murder never would have ended. Indeed, it's entirely conceivable there would now be no identifiable human civilization left, once nuclear weapons entered the killing equation.  But the world did not keep sliding down that path of perpetual war. Instead, America stepped up and changed everything by ushering in our now-perpetual great-power peace. We introduced the international liberal trade order known as globalization and played loyal Leviathan over its spread. What resulted was the collapse of empires, an explosion of democracy, the persistent spread of human rights, the liberation of women, the doubling of life expectancy, a roughly 10-fold increase in adjusted global GDP and a profound and persistent reduction in battle deaths from state-based conflicts.

#### Third, Terrorism - spent nuclear fuel is exposed in the status quo – fast reactors solve

**NTI 12** [Nuclear Threat Initiative, 8-1-2012, "Why Is Highly Enriched Uranium a Threat?" Prepared by the James Martin Center for Nonproliferation Studies at the Monterey Institute of International Studies]

The most difficult challenge for a terrorist organization seeking to build a nuclear weapon or improvised nuclear device is obtaining fissile material, either plutonium or highly enriched uranium (HEU). HEU, uranium that has been processed to increase the proportion of the U-235 isotope to over 20%, is required for the construction of a gun-type nuclear device, the simplest type of nuclear weapon. The greater the proportion of U-235 (i.e. the higher the enrichment level), the less material is needed for a nuclear explosive device. Weapons-grade uranium generally refers to uranium enriched to at least 90%, but material of far lower enrichment levels, found in both fresh and spent nuclear fuel, can be used to create a nuclear explosive device.¶ In 2002, the U.S. National Research Council warned that "crude HEU weapons could be fabricated without state assistance," noting that "the primary impediment that prevents countries or technically competent terrorist groups from developing nuclear weapons is the availability of [nuclear material], especially HEU."[1] Creating a nuclear weapon from HEU is technically easier than building a plutonium weapon. Moreover, current technology is unlikely to detect a shielded nuclear device on a truck or boat. Therefore, securing and eliminating stocks of HEU is the surest way to decrease the risk that terrorist groups could use this material to create a nuclear explosion.¶ Where Is Civilian HEU Located?¶ Experts estimate that approximately 70 tons of HEU are used in civilian applications worldwide. [2] As little as 25 kilograms (kg) of U-235 (which amounts to about 28kg of HEU enriched to 90%) is needed to produce a nuclear weapon; about 40-60kg is needed for a cruder nuclear device. [3] Bomb-grade material can be obtained from HEU that is fresh (unirradiated), and irradiated (also referred to as spent). Fresh and lightly irradiated fuel (such as fuel used in critical assemblies and pulse reactors) is not significantly radioactive, and is therefore relatively safe to handle. Although using nuclear fuel in high-powered reactors initially makes it highly radioactive and thus very difficult to handle safely (often this fuel is referred to as "self-protecting"), spent fuel loses its radioactivity over time, making it easier to handle and potentially more attractive to terrorists.¶ HEU is currently used in the civilian sphere to fuel research reactors, critical assemblies, pulsed reactors, and a few fast reactors. According to the International Atomic Energy Agency (IAEA), 244 research reactors are in operation or temporarily shut down across 56 countries. A further 441 reactors have been shut down or decommissioned, while eight are planned or under construction. [4]

#### That’s key to the nuclear taboo – solves nuclear war

Bin ‘9(5-22-09 About the Authors Prof. Li Bin is a leading Chinese expert on arms control and is currently the director of Arms Control Program at the Institute of International Studies, Tsinghua University. He received his Bachelor and Master Degrees in Physics from Peking University before joining China Academy of Engineering Physics (CAEP) to pursue a doctorate in the technical aspects of arms control. He served as a part-time assistant on arms control for the Committee of Science, Technology and Industry for National Defense (COSTIND).Upon graduation Dr. Li entered the Institute of Applied Physics and Computational Mathematics (IAPCM) as a research fellow and joined the COSTIND technical group supporting Chinese negotiation team on Comprehensive Test Ban Treaty (CTBT). He attended the final round of CTBT negotiations as a technical advisor to the Chinese negotiating team. Nie Hongyi is an officer in the People’s Liberation Army with an MA from China’s National Defense University and a Ph.D. in International Studies from Tsinghua University, which he completed in 2009 under Prof. Li Bin. )

The nuclear taboo is a kind of international norm and this type of norm is supported by the promotion of the norm through international social exchange. But at present the increased **threat of nuclear terrorism has lowered people’s confidence that nuclear weapons will not be used**. China and the United States have a broad common interest in combating nuclear terrorism. **Using technical and institutional measures to break the foundation of nuclear terrorism and lessen the possibility of a nuclear terrorist attack can** not only weaken the danger of nuclear terrorism itself but also **strengthen people’s confidence in the nuclear taboo**, and in this way preserve an international environment beneficial to both China and the United States. In this way **even if there is crisis** in China-U.S. relations caused by conflict, **the nuclear taboo can** also help both countries **reduce suspicions** about the nuclear weapons problem, **avoid miscalculation and thereby reduce the danger of a nuclear war.**

### 2

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise

**Prothero 12** [Donald R. Prothero, Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, "How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO]

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### Causes extinction – war

Sawin 12 [Janet Sawin, Senior Director of the Energy and Climate Change Program at the WorldWatch Institute, Aug 2012, “Climate Change Poses Greater Security Threat than Terrorism]

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources.

#### Warming causes extinction

**Sify 2010 –** Sydney newspaper citing Ove Hoegh-Guldberg, professor at University of Queensland and Director of the Global Change Institute, and John Bruno, associate professor of Marine Science at UNC (Sify News, “Could unbridled climate changes lead to human extinction?”, <http://www.sify.com/news/could-unbridled-climate-changes-lead-to-human-extinction-news-international-kgtrOhdaahc.html>, WEA)

The findings of the comprehensive report: 'The impact of climate change on the world's marine ecosystems' emerged from a synthesis of recent research on the world's oceans, carried out by two of the world's leading marine scientists. One of the authors of the report is Ove Hoegh-Guldberg, professor at The University of Queensland and the director of its Global Change Institute (GCI). 'We may see sudden, unexpected changes that have serious ramifications for the overall well-being of humans, including the capacity of the planet to support people. This is further evidence that we are well on the way to the next great extinction event,' says Hoegh-Guldberg. 'The findings have enormous implications for mankind, particularly if the trend continues. The earth's ocean, which produces half of the oxygen we breathe and absorbs 30 per cent of human-generated carbon dioxide, is equivalent to its heart and lungs. This study shows worrying signs of ill-health. It's as if the earth has been smoking two packs of cigarettes a day!,' he added. 'We are entering a period in which the ocean services upon which humanity depends are undergoing massive change and in some cases beginning to fail', he added. The 'fundamental and comprehensive' changes to marine life identified in the report include rapidly warming and acidifying oceans, changes in water circulation and expansion of dead zones within the ocean depths. These are driving major changes in marine ecosystems: less abundant coral reefs, sea grasses and mangroves (important fish nurseries); fewer, smaller fish; a breakdown in food chains; changes in the distribution of marine life; and more frequent diseases and pests among marine organisms. Study co-author John F Bruno, associate professor in marine science at The University of North Carolina, says greenhouse gas emissions are modifying many physical and geochemical aspects of the planet's oceans, in ways 'unprecedented in nearly a million years'. 'This is causing fundamental and comprehensive changes to the way marine ecosystems function,' Bruno warned, according to a GCI release. These findings were published in Science

#### The IFR is the only way to reduce coal emissions sufficiently to avert the worst climate disasters

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "Why We Should Build an Integral Fast Reactor Now," 11/25/9) http://skirsch.wordpress.com/2009/11/25/ifr/

To prevent a climate disaster, we must eliminate virtually all coal plant emissions worldwide in 25 years. The best way and, for all practical purposes, the only way to get all countries off of coal is not with coercion; it is to make them want to replace their coal burners by giving them a plug-compatible technology that is less expensive. The IFR can do this. It is plug-compatible with the burners in a coal plant (see Nuclear Power: Going Fast). No other technology can upgrade a coal plant so it is greenhouse gas free while reducing operating costs at the same time. In fact, no other technology can achieve either of these goals. The IFR can achieve both.¶ The bottom line is that without the IFR (or a yet-to-be-invented technology with similar ability to replace the coal burner with a cheaper alternative), it is unlikely that we’ll be able to keep CO2 under 450 ppm.¶ Today, the IFR is the only technology with the potential to displace the coal burner. That is why restarting the IFR is so critical and why Jim Hansen has listed it as one of the top five things we must do to avert a climate disaster.[4]¶ Without eliminating virtually all coal emissions by 2030, the sum total of all of our other climate mitigation efforts will be inconsequential. Hansen often refers to the near complete phase-out of carbon emissions from coal plants worldwide by 2030 as the sine qua non for climate stabilization (see for example, the top of page 6 in his August 4, 2008 trip report).¶ To stay under 450ppm, we would have to install about 13,000 GWe of new carbon-free power over the next 25 years. That number was calculated by Nathan Lewis of Caltech for the Atlantic, but others such as Saul Griffith have independently derived a very similar number and White House Science Advisor John Holdren used 5,600 GWe to 7,200 GWe in his presentation to the Energy Bar Association Annual Meeting on April 23, 2009. That means that if we want to save the planet, we must install more than 1 GWe per day of clean power every single day for the next 25 years. That is a very, very tough goal. It is equivalent to building one large nuclear reactor per day, or 1,500 huge wind turbines per day, or 80,000 37 foot diameter solar dishes covering 100 square miles every day, or some linear combination of these or other carbon free power generation technologies. Note that the required rate is actually higher than this because Hansen and Rajendra Pachauri, the chair of the IPCC, now both agree that 350ppm is a more realistic “not to exceed” number (and we’ve already exceeded it).¶ Today, we are nowhere close to that installation rate with renewables alone. For example, in 2008, the average power delivered by solar worldwide was only 2 GWe (which is to be distinguished from the peak solar capacity of 13.4GWe). That is why every renewable expert at the 2009 Aspen Institute Environment Forum agreed that nuclear must be part of the solution. Al Gore also acknowledges that nuclear must play an important role.¶ Nuclear has always been the world’s largest source of carbon free power. In the US, for example, even though we haven’t built a new nuclear plant in the US for 30 years, nuclear still supplies 70% of our clean power!¶ Nuclear can be installed very rapidly; much more rapidly than renewables. For example, about two thirds of the currently operating 440 reactors around the world came online during a 10 year period between 1980 and 1990. So our best chance of meeting the required installation of new power goal and saving the planet is with an aggressive nuclear program.¶ Unlike renewables, nuclear generates base load power, reliably, regardless of weather. Nuclear also uses very little land area. It does not require the installation of new power lines since it can be installed where the power is needed. However, even with a very aggressive plan involving nuclear, it will still be extremely difficult to install clean power fast enough.¶ Unfortunately, even in the US, we have no plan to install the clean power we need fast enough to save the planet. Even if every country were to agree tomorrow to completely eliminate their coal plant emissions by 2030, how do we think they are actually going to achieve that? There is no White House plan that explains this. There is no DOE plan. There is no plan or strategy. The deadlines will come and go and most countries will profusely apologize for not meeting their goals, just like we have with most of the signers of the Kyoto Protocol today. Apologies are nice, but they will not restore the environment.¶ We need a strategy that is believable, practical, and affordable for countries to adopt. The IFR offers our best hope of being a centerpiece in such a strategy because it the only technology we know of that can provide an economically compelling reason to change.¶ At a speech at MIT on October 23, 2009, President Obama said “And that’s why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. … The nation that wins this competition will be the nation that leads the global economy. I am convinced of that. And I want America to be that nation, it’s that simple.”¶ Nuclear is our best clean power technology and the IFR is our best nuclear technology. The Gen IV International Forum (GIF) did a study in 2001-2002 of 19 different reactor designs on 15 different criteria and 24 metrics. The IFR ranked #1 overall. Over 242 experts from around the world participated in the study. It was the most comprehensive evaluation of competitive nuclear designs ever done. Top DOE nuclear management ignored the study because it didn’t endorse the design the Bush administration wanted.¶ The IFR has been sitting on the shelf for 15 years and the DOE currently has no plans to change that.¶ How does the US expect to be a leader in clean energy by ignoring our best nuclear technology? Nobody I’ve talked to has been able to answer that question.¶ We have the technology (it was running for 30 years before we were ordered to tear it down). And we have the money: The Recovery Act has $80 billion dollars. Why aren’t we building a demo plant?¶ IFRs are better than conventional nuclear in every dimension. Here are a few:¶ Efficiency: IFRs are over 100 times more efficient than conventional nuclear. It extracts nearly 100% of the energy from nuclear material. Today’s nuclear reactors extract less than 1%. So you need only 1 ton of actinides each year to feed an IFR (we can use existing nuclear waste for this), whereas you need 100 tons of freshly mined uranium each year to extract enough material to feed a conventional nuclear plant.¶ Unlimited power forever: IFRs can use virtually any actinide for fuel. Fast reactors with reprocessing are so efficient that even if we restrict ourselves to just our existing uranium resources, we can power the entire planet forever (the Sun will consume the Earth before we run out of material to fuel fast reactors). If we limited ourselves to using just our DU “waste” currently in storage, then using the IFR we can power the US for over 1,500 years without doing any new mining of uranium.[5]¶ Exploits our largest energy resource: In the US, there is 10 times as much energy in the depleted uranium (DU) that is just sitting there as there is coal in the ground. This DU waste is our largest natural energy resource…but only if we have fast reactors. Otherwise, it is just waste. With fast reactors, virtually all our nuclear waste (from nuclear power plants, leftover from enrichment, and from decommissioned nuclear weapons)[6] becomes an energy asset worth about $30 trillion dollars…that’s not a typo…$30 trillion, not billion.[7] An 11 year old child was able to determine this from publicly available information in 2004.

#### Alternative methods can’t solve warming

**Kirsch 9** (Steve Kirsch, Bachelor of Science and a Master of Science in electrical engineering and computer science from the Massachusetts Institute of Technology, American serial entrepreneur who has started six companies: Mouse Systems, Frame Technology, Infoseek, Propel, Abaca, and OneID, "How Does Obama Expect to Solve the Climate Crisis Without a Plan?" 7/16/9) <http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html-http://www.huffingtonpost.com/steve-kirsch/how-does-obama-expect-to_b_236588.html>

The ship is sinking slowly and we are quickly running out of time to develop and implement any such plan if we are to have any hope of saving the planet. What we need is a plan we can all believe in. A plan where our country's smartest people all nod their heads in agreement and say, "Yes, this is a solid, viable plan for keeping CO2 levels from touching 425ppm and averting a global climate catastrophe."¶ ¶ At his Senate testimony a few days ago, noted climate scientist James Hansen made it crystal clear once again that the only way to avert an irreversible climate meltdown and save the planet is to phase out virtually all coal plants worldwide over a 20 year period from 2010 to 2030. Indeed, if we don't virtually eliminate the use of coal worldwide, everything else we do will be as effective as re-arranging deck chairs on the Titanic.¶ ¶ Plans that won't work¶ ¶ Unfortunately, nobody has proposed a realistic and practical plan to eliminate coal use worldwide or anywhere close to that. There is no White House URL with such a plan. No environmental group has a workable plan either.¶ ¶ Hoping that everyone will abandon their coal plants and replace them with a renewable power mix isn't a viable strategy -- we've proven that in the U.S. Heck, even if the Waxman-Markey bill passes Congress (a big "if"), it is so weak that it won't do much at all to eliminate coal plants. So even though we have Democrats controlling all three branches of government, it is almost impossible to get even a weak climate bill passed.¶ ¶ If we can't pass strong climate legislation in the U.S. with all the stars aligned, how can we expect anyone else to do it? So expecting all countries to pass a 100% renewable portfolio standard (which is far far beyond that contemplated in the current energy bill) just isn't possible. Secondly, even if you could mandate it politically in every country, from a practical standpoint, you'd never be able to implement it in time. And there are lots of experts in this country, including Secretary Chu, who say it's impossible without nuclear (a point which I am strongly in agreement with).¶ ¶ Hoping that everyone will spontaneously adopt carbon capture and sequestration (CCS) is also a non-starter solution. First of all, CCS doesn't exist at commercial scale. Secondly, even if we could make it work at scale, and even it could be magically retrofitted on every coal plant (which we don't know how to do), it would require all countries to agree to add about 30% in extra cost for no perceivable benefit. At the recent G8 conference, India and China have made it clear yet again that they aren't going to agree to emission goals.¶ ¶ Saying that we'll invent some magical new technology that will rescue us at the last minute is a bad solution. That's at best a poor contingency plan.¶ ¶ The point is this: It should be apparent to us that we aren't going to be able to solve the climate crisis by either "force" (economic coercion or legislation) or by international agreement. And relying on technologies like CCS that may never work is a really bad idea.¶ ¶ The only remaining way to solve the crisis is to make it economically irresistible for countries to "do the right thing." The best way to do that is to give the world a way to generate electric power that is economically more attractive than coal with the same benefits as coal (compact power plants, 24x7 generation, can be sited almost anywhere, etc). Even better is if the new technology can simply replace the existing burner in a coal plant. That way, they'll want to switch. No coercion is required.

### 3

#### Argonne National Lab has a severe shortfall of quality scientists now – the best and brightest aren’t replacing retirees

Grossenbacher 08[CQ Congressional Testimony, April 23, 2008, John, Laboratory Director Idaho National Laboratory, “NUCLEAR POWER,” SECTION: CAPITOL HILL HEARING TESTIMONY, Statement of John J. Grossenbacher Laboratory Director Idaho National Laboratory, Committee on House Science and Technology, Lexis]

While all of the programs I've highlighted for you individually and collectively do much to advance the state of the art in nuclear science and technology, and enable the continued global expansion of nuclear power, there is a great area of challenge confronting nuclear energy's future. As with most other technologically intensive U.S. industries - it has to do with human capital and sustaining critical science and technology infrastructure. My laboratory, its fellow labs and the commercial nuclear power sector all face a troubling reality - a significant portion of our work force is nearing retirement age and the pipeline of qualified potential replacements is not sufficiently full. Since I'm well aware of this committee's interests in science education, I'd like to update you on what the Department and its labs are doing to inspire our next generation of nuclear scientists, engineers and technicians. Fundamentally, the Office of Nuclear Energy has made the decision to invite direct university partnership in the shared execution of all its R&D programs and will set aside a significant amount of its funds for that purpose. Already, nuclear science and engineering programs at U.S. universities are involved in the Office of Nuclear Energy's R&D, but this move will enable and encourage even greater participation in DOE's nuclear R&D programs. In addition, all NE-supported labs annually bring hundreds of our nation's best and brightest undergraduate and graduate students on as interns or through other mechanisms to conduct real research. For example, at INL we offer internships, fellowships, joint faculty appointments and summer workshops that focus on specific research topics or issues that pertain to maintaining a qualified workforce. This year, we are offering a fuels and materials workshop for researchers and a 10-week training course for engineers interested in the field of reactor operations. Last year, DOE designated INL's Advanced Test Reactor as a national scientific user facility, enabling us to open the facility to greater use by universities and industry and to supporting more educational opportunities. ATR is a unique test reactor that offers the ability to test fuels and materials in nine different prototypic environments operated simultaneously. With this initiative, we join other national labs such as Argonne National Laboratory and Oak Ridge National Laboratory in offering nuclear science and engineering assets to universities, industry and the broader nuclear energy research community. Finally, national laboratories face their own set of challenges in sustaining nuclear science and technology infrastructure - the test reactors, hot cells, accelerators, laboratories and other research facilities that were developed largely in support of prior missions. To obtain a more complete understanding of the status of these assets, the Office of Nuclear Energy commissioned a review by Battelle to examine the nuclear science and technology infrastructure at the national laboratories and report back later this year on findings and recommendations on a strategy for future resource allocation that will enable a balanced, yet sufficient approach to future investment in infrastructure.

#### The plan attracts the best and brightest back to Argonne – successful demonstration of IFR spurs collaborative nuclear interdisciplinary research

Blees 8 [Tom Blees 2008 “Prescription for the Planet: The painless remedy for our energy and environmental crises” Pg. 367]

21. Restart nuclear power development research at national labs like Argonne, concentrating on small reactor designs like the nuclear battery ideas discussed earlier. Given the cost and difficulty of extending power grids over millions of square miles of developing countries, the advantages of distributed generation in transforming the energy environment of such countries can hardly be exaggerated. It is a great pity that many of the physicists and engineers who were scattered when the Argonne IFR project was peremptorily terminated chose to retire. Rebuilding that brain trust should be, well, a no-brainer. If one but looks at the incredible challenges those talented people were able to meet, it seems perfectly reasonable to suppose that a focus on small sealed reactor development could likewise result in similar success. Some of those working on the AHTR and other seemingly unneeded projects could well transition to R&D that fits into the new paradigm. Japanese companies are already eager to build nuclear batteries, and there should be every effort to work in concert with them and other researchers as we develop these new technologies. The options this sort of collaborative research would open up for the many varied types of energy needs around the world would be incalculable.

#### Attracting leading scientists to Argonne key to successful development of the Advanced Photon Source

**Fischetti** et all **9** [“Proceedings of the¶ Advanced Photon Source Renewal Workshop”¶ Hickory Ridge Marriott Conference Hotel¶ Presentation to Department of Energy¶ October 20-21, 2008¶ February 2009¶ Robert F. Fischetti Argonne National Laboratory, Biosciences Division;¶ APS Life Sciences Council representative¶ Paul H. Fuoss Argonne National Laboratory, Materials Science Division;¶ APS Users Organization representative¶ Rodney E. Gerig Argonne National Laboratory, Photon Sciences, Denis T. Keane Northwestern University;¶ DuPont-Northwestern-Dow Collaborative Access Team;¶ APS Partner User Council representative¶ John F. Maclean Argonne National Laboratory, APS Engineering Division¶ Dennis M. Mills, Chair Argonne National Laboratory, Photon Sciences, Dan A. Neumann National Institute of Standards and Technology; APS Scientific Advisory Committee representative¶ George Srajer Argonne National Laboratory, X-ray Science Division]

Scientific Community¶ An enhanced catalyst research beamline with capabilities for in situ XAFS, powder¶ diffraction, and kinetics measurements would benefit the entire catalysis community,¶ i.e., government research laboratories, academia, and industry. The beamline and its¶ staff would also serve as a focal point for expanding catalyst research to other APS¶ beamlines using advanced techniques not routinely applied to catalyst systems, e.g.,¶ SAXS, XES, RIXS, and HERF spectroscopy. Development of these latter methods¶ would position the APS as a leader in this area and attract leading scientists from all¶ over the world. It is expected that new users would initially characterize their materials and identify appropriate systems for specialized techniques.¶ Fig. 4. Cell for in situ x-ray absorption studies of fuel cell¶ catalysts. Standard Fuel Cell Technologies cell hardware¶ was machined to allow x-ray fluorescence studies of cathode electrocatalysts in an operating membrane-electrode¶ assembly (fuel cell). (Argonne National Laboratory photograph)Throughout the U.S. and the world, there are countless research groups working to¶ develop the enabling material in fuel cell catalysis: an oxygen reduction electrocatalyst that is less expensive and more durable than platinum [36-38]. A few of these¶ groups utilize synchrotron-based x-ray techniques to characterize their electrocatalysts; however, these studies are almost exclusively in environments mimicking the¶ reactive environment or are ex situ. A notable exception is the catalyst development¶ effort being led by Los Alamos National Laboratory, which encompasses many approaches and involves many university and national laboratories. As part of this project, Argonne researchers have developed the capability to characterize catalysts¶ containing low-atomic-number elements in an operating fuel cell using XAFS at the¶ APS. Utilizing this cell (Fig. 4), Argonne scientists have determined the active site in¶ a cobalt-containing catalyst. This capability would be extremely useful to other catalyst development teams around the country and the world, and it is envisioned that a¶ dedicated APS electrocatalysis beamline could be designed and made available to¶ these teams. The neutron source at the National Institute of Standards and Technology (NIST) has a beamline dedicated to studies of water transport in fuel cells, which¶ has provided invaluable information for fuel cell materials design. The APS beamline¶ would be the catalyst counterpart to the NIST beamline.¶ A molecular-level understanding of the interactions and correlations that occur in solution and between solution phases is essential to building a predictive capability of a¶ metal ion’s solubility, reactivity, kinetics, and energetics. Until the recent availability¶ of tunable, high-energy x-rays this understanding has been significantly limited by¶ the absence of structural probes. The APS, with its high flux of high-energy x-rays, is¶ the ideal synchrotron source to provide this new information, which is critical to the¶ advancement of solution chemistry. The utility of high-energy x-rays is currently¶ being demonstrated as part of an APS Partner User Proposal (PUP-52), and has received high visibility, including an Inorganic Chemistry feature cover [34]. This effort¶ is interesting a cadre of solution chemists that, to date, have not been part of the user¶ base at synchrotron facilities. The extension of high-energy capabilities from simple¶ PDF experiments to more complex liquid-liquid interfaces is expected to significantly¶ broaden this new interest group into areas including soft-matter studies.

#### APS key to safe nanotech development

**Lindsey 12** [“Scientist Uses Advance Photon Source to Study Nano-Scale Materials”, Laura, Director of Communications and Marketing, The College of Arts and Science, ¶ University of Missouri Columbia, Department of Physics and Astronomy, Jan 25, 2012]

Emerging new technologies utilize advanced materials that are assembled on exceedingly small scales of length. Because of their small size, these nano-scale materials often exhibit unique properties that can potentially be harnessed for applications and new science. In order to do this however, one needs a comprehensive understanding and characterization of their physical behavior on the atomic scale. Professor Paul Miceli is doing just that with the Advanced Photon Source (APS) at Argonne National Laboratory in Argonne, Ill. The APS is the brightest source of x-rays in North America. This machine, which is one kilometer in circumference, allows scientists to collect data with unprecedented detail and in short time frames.¶ “The Advanced Photon Source’s x-ray beam is a billion times more intense than what I can see in my lab,” says Miceli.¶ He deposits thin layers, typically one atom thick, onto a surface from a vapor and then studies the structures by scattering the intense x-ray beam. By doing this, Miceli can determine how the atoms rearrange themselves on the surface so he can develop a better understanding of how nano-structures grow. Because of the unprecedented brightness of the x-ray beam, he is able to observe the materials as they grow in real time. In addition to the unique aspect of the x-ray beam, these studies are facilitated by an extensive ultra-high-vacuum growth-and-analysis chamber residing at the APS that was designed and developed by Miceli.¶ “My findings pertain to basic science about how atoms organize themselves,” says Miceli.¶ Because the x-ray beam can probe both the surface and the subsurface of the materials, Miceli’s research has made discoveries that could not be achieved by other techniques. For example, his research found that nano-clusters of missing atoms become incorporated into metallic crystals as they grow. This discovery is important because it brings new insight to theories of crystal growth, and it forces scientists to think about how atomic-scale mechanisms might lead to the missing atoms**.** Such effects, which also have practical implications for technological applications of nano-materials, have not been considered in current theories.¶ Other studies by Miceli have shown that the growth of some metallic nano-crystals cannot be explained by conventional theories of crystal growth. For example, quantum-mechanical effects on the conduction electrons in very small nano-crystals can change the energy of the crystal, and Miceli showed that the statistical mechanics of coarsening — when large crystals become larger while small crystals get smaller and vanish — does not follow the conventional theories that have worked successfully in materials science over the past 50 years. In fact, he has found that atoms can move over metallic nano-crystalline surfaces thousands of times faster than normal crystals, illustrating the many surprises and challenges that nano-scale materials present to scientists.

#### Nanotech is inevitable – information generation facilitates safe stewardship that prevents grey goo

**Treder and Phoenix 3** [PUBLISHED JANUARY 2003 — REVISED DECEMBER 2003, “Safe Utilization of Advanced Nanotechnology”, Chris Phoenix and Mike Treder, Mike Treder, Executive Director of CRN, BS Biology, University of Washington, Research Fellow with the Institute for Ethics and Emerging Technologies, a consultant to the Millennium Project of the American Council for the United Nations University and to the Future Technologies Advisory Group, serves on the Nanotech Briefs Editorial Advisory Board, is a member of the New York Academy of Sciences and a member of the World Future Society. AND Chris Phoenix, CRN’s Director of Research, has studied nanotechnology for more than 15 years. BS, Symbolic Systems, MS, Computer Science, Stanford University]

Many words have been written about the dangers of advanced nanotechnology. Most of the threatening scenarios involve tiny manufacturing systems that run amok, or are used to create destructive products. A manufacturing infrastructure built around a centrally controlled, relatively large, self-contained manufacturing system would avoid these problems. A controlled nanofactory would pose no inherent danger, and it could be deployed and used widely. Cheap, clean, convenient, on-site manufacturing would be possible without the risks associated with uncontrolled nanotech fabrication or excessive regulation. Control of the products could be administered by a central authority; intellectual property rights could be respected. In addition, restricted design software could allow unrestricted innovation while limiting the capabilities of the final products. The proposed solution appears to preserve the benefits of advanced nanotechnology while minimizing the most serious risks.¶ Advanced Nanotechnology And Its Risks¶ As early as 1959, Richard Feynman proposed building devices with each atom precisely placed1. In 1986, Eric Drexler published an influential book, Engines of Creation2, in which he described some of the benefits and risks of such a capability. If molecules and devices can be manufactured by joining individual atoms under computer control, it will be possible to build structures out of diamond, 100 times as strong as steel; to build computers smaller than a bacterium; and to build assemblers and mini-factories of various sizes, capable of making complex products and even of duplicating themselves.¶ Drexler's subsequent book, Nanosystems3, substantiated these remarkable claims, and added still more. A self-contained tabletop factory could produce its duplicate in one hour. Devices with moving parts could be incredibly efficient. Molecular manufacturing operations could be carried out with failure rates less than one in a quadrillion. A computer would require a miniscule fraction of a watt and one trillion of them could fit into a cubic centimeter. Nanotechnology-built fractal plumbing would be able to cool the resulting 10,000 watts of waste heat. It seems clear that if advanced nanotechnology is ever developed, its products will be incredibly powerful.¶ As soon as molecular manufacturing was proposed, risks associated with it began to be identified. Engines of Creation2 described one hazard now considered unlikely, but still possible: grey goo. A small nanomachine capable of replication could in theory copy itself too many times4. If it were capable of surviving outdoors, and of using biomass as raw material, it could severely damage the environment5. Others have analyzed the likelihood of an unstable arms race6, and many have suggested economic upheaval resulting from the widespread use of free manufacturing7. Some have even suggested that the entire basis of the economy would change, and money would become obsolete8.¶ Sufficiently powerful products would allow malevolent people, either hostile governments or angry individuals, to wreak havoc. Destructive nanomachines could do immense damage to unprotected people and objects. If the wrong people gained the ability to manufacture any desired product, they could rule the world, or cause massive destruction in the attempt9. Certain products, such as vast surveillance networks, powerful aerospace weapons, and microscopic antipersonnel devices, provide special cause for concern. Grey goo is relevant here as well: an effective means of sabotage would be to release a hard-to-detect robot that continued to manufacture copies of itself by destroying its surroundings.¶ Clearly, the unrestricted availability of advanced nanotechnology poses grave risks, which may well outweigh the benefits of clean, cheap, convenient, self-contained manufacturing. As analyzed in Forward to the Future: Nanotechnology and Regulatory Policy10, some restriction is likely to be necessary. However, as was also pointed out in that study, an excess of restriction will enable the same problems by increasing the incentive for covert development of advanced nanotechnology. That paper considered regulation on a one-dimensional spectrum, from full relinquishment to complete lack of restriction. As will be shown below, a two-dimensional understanding of the problem—taking into account both control of nanotech manufacturing capability and control of its products—allows targeted restrictions to be applied, minimizing the most serious risks while preserving the potential benefits.

#### Extinction in 72 hours

Mark Pesce, BS Candidate at MIT, October, 1999, “Thinking Small,” FEED Magazine, http://hyperreal.org/~mpesce/ThinkingSmall.html

The nanoassembler is the Holy Grail of nanotechnology; once a perfected nanoassembler is available, almost anything becomes possible – which is both the greatest hope and biggest fear of the nanotechnology community. Sixty years ago, John Von Neumann – who, along with Alan Turing founded the field of computer science – surmised that it would someday be possible to create machines that could copy themselves, a sort of auto-duplication which could lead from a single instance to a whole society of perfect copies. Although such a Von Neumann machine is relatively simple in theory, such a device has never been made – because it’s far easier, at the macromolecular scale, to build a copy of a machine than it is to get the machine to copy itself. At the molecular level, this balance is reversed; it’s far easier to get a nanomachine to copy itself than it is to create another one from scratch. This is an enormous boon – once you have a single nanoassembler you can make as many as you might need – but it also means that a nanoassembler is the perfect plague. If – either intentionally or through accident – a nanoassembler were released into the environment, with only the instruction to be fruitful and multiply, the entire surface of the planet – plants, animals and even rocks - would be reduced to a “gray goo” of such nanites in little more than 72 hours. This “gray goo problem”, well known in nanotechnology acts as a check against the unbounded optimism which permeates scientific developments in atomic-scale devices. Drexler believes the gray goo problem mostly imaginary, but does admit the possibility of a “gray dust” scenario, in which replicating nanites “smother” the Earth in a blanket of sub-microscopic forms. In either scenario, the outcome is much the same. And here we encounter a technological danger unprecedented in history: If we had stupidly blown ourselves to kingdom come in a nuclear apocalypse, at least the cockroaches would have survived. But in a gray goo scenario, nothing – not even the bacteria deep underneath the ground – would be untouched. Everything would become one thing: a monoculture of nanites.

#### APS solves human embryonic development and fertility

**Xu 8** [“A Nuclear Receptor with Implications for a Host of Diseases”, Schoen W. Kruse, Kelly Suino-Powell, X. Edward Zhou, Jennifer E. Kretschman, Ross Reynolds, Clemens Vonrhein, Yong Xu, Liliang Wang, Sophia Y. Tsai, Ming-Jer Tsai, and H. Eric Xu, Press released of ‘Identification of COUP-TFII Orphan Nuclear Receptor as a Retinoic Acid–Activated Receptor,” PLoS Biology 6 (9), e277 (September 2008), Sept 25, 2008]

The crystal structure of the COUP-TFII receptor.¶ The molecular structure of a nuclear receptor that regulates the expression of specific genes within cells may serve as a drug target for diseases related to heart and blood-vessel development, human embryonic development, and female infertility, according to a team of researchers from the Van Andel Institute (VAI), Grand Valley State University, Global Phasing Ltd., and Baylor College of Medicine. The researchers, using an x-ray beamline at the U.S. Department of Energy’s Advanced Photon Source (APS) at Argonne National Laboratory, also found that the receptor, named COUP-TFII, is activated by retinoic acid, a form of Vitamin A.¶ "Not only does the structural information provide a basis for drug design in any diseases where COUP-TFII plays a role, but it also can provide insight into the entire subfamily of receptors to which COUP-TFII belongs, which could have implications for additional associated diseases," said Eric Xu of VAI, who with his colleagues authored the article on this study that was published in PLoS Biology.¶ The researchers determined the molecular structure of COUP-TFII via x-ray crystallography carried out at the DuPont-Northwestern-Dow Collaborative Access Team 5-ID-B,C,D beamline at the APS. Structural information such as this can help drug developers fit therapeutics more perfectly to the receptors they bind to for maximum potency, and can also aid in manipulating drugs to produce fewer side effects.¶ The findings could also have implications for cancer therapy. "Since COUP-TFII plays a role in embryonic blood vessel development, it might play a similar role in tumors and cancer growth," said Schoen Kruse, also from VAI and lead author of the study. "Formation of new blood supply in tumors is a stepping stone in the ability of cancers to grow and metastasize within the body."¶ The signal-triggering molecules, known as ligands — which activate nuclear receptors — have been discovered for most receptors, but not for a subset of “orphan” nuclear receptors whose ligand remains unknown. This study's finding that COUP-TFII is activated by retinoic acid is significant since the receptor previously belonged to this subset of orphan receptors.

#### Inevitable extinction otherwise

**Plimmer 11** [2011, Andrew Plimmer, “Are We Poisoning Ourselves Into Extinction?”, environmental activist from Australia]

Are We Poisoning Ourselves Into Extinction? ¶ Have you heard any of the disquieting reports on worldwide infertility and wondered if we are in the process of making the human race extinct with our continued usage of environmental toxins that affect both male and female infertility?¶ Besides affecting fertility, toxins have been proven to increase the risk of miscarriage in pregnant women.¶ If you aren’t up to speed on this scary topic, here are a few factoids that you may find startling, if not downright terrifying:¶ In 1938, only one half of 1% of males were functionally sterile. Functionally sterile means that the sperm count of a man is below 20 million viable sperm per milliliter of semen. Today, that percentage has increased 15 fold and is now between 8 and 12%. ¶ Dr. Cecil Jacobson ,Reproductive Genetics Center, Vienna, Virginia¶ Miscarriage is more likely to occur in women whose partners have a low sperm count. An average of 48% of the father’s sperm involved in female miscarriages were abnormal…some with two heads and two tails, for instance. By the same token, males who fathered normal pregnancies had 25% higher sperm counts and a mere 5% of abnormal sperm.¶ Drs. Mirjam Furuhjelm and Birgit Jonson ,Dept. of Obst. and Gyn., Sabbatsberg Hospital, Karolinska Institute, Stockholm, Sweden¶ In 1988, a study conducted by the United States National Center for Health Statistics estimated that of women aged 15-44, approximately 8.5% had a less than normal chance of becoming pregnant. ¶ Dr. Howard Jones , New England Journal of Medicine ,December 2, 1993 pg. 1710¶ Miscarriage rates are significantly higher among women living near agricultural areas where certain pesticides are used on crops. In fact, there is a huge 40% to 120% increase of miscarriage due to birth defects.¶ Epidemiology, March 2001¶ Pesticides are linked to male infertility. Studies have shown that infertile men are 10 times more likely to be employed in agricultural jobs using pesticides than men engaged in another, pesticide-free, line of work.¶ American Journal of Industrial Medicine, Vol. 24:587-592, 1983¶ The pesticide Chlordane was found to lower sperm count and damage the part of the male testicles that produce sperm. ¶ Drs. Khawla J. Balash, Muthanna A. Al-Omar ,Univ. of Baghdad, Biological Research Center¶ Approximately 75% of all American homes contain the pesticide Chlordane in the breathable air! ¶ Teratogenesis, Carcinogenesis, & Mutagenesis, Vol. 7:527-540, 1987¶ Women employed in microelectronics assembly using the cleaning solvents xylene, acetone, trichlorethylene, petroleum distillates and others have been found to have spontaneous abortion rates more than 4X normal. ¶ British Journal of Industrial Medicine, Vol. 47:400-404, 1990

### Solvency

#### Contention 4: Solvency

#### Loan guarantees solve – conservative arguments about cronyism and risk underestimation ignore 20 years of loan guarantee data to the contrary

**Griffith and Caperton, 12** - John Griffith is a Policy Analyst with the Economic Policy team at the Center for American Progress. Richard Caperton is the Director of Clean Energy Investment at the Center (Major Analysis: Federal Loans And Loan Guarantees Have A Huge Benefit But A Low And Predicatable Cost, 5/3, <http://thinkprogress.org/climate/2012/05/03/475978/major-analysis-federal-loans-and-loan-guarantees-have-a-huge-benefit-but-a-low-and-predicatable-cost/>)

These programs typically run at very low cost to taxpayers. On average, every $1 allocated to loan and guarantee programs generates more than $99 of economic activity from individuals, businesses, nonprofits, and state and local governments, according to our analysis.¶ But in the wake of certain widely publicized credit blunders, most notably this past summer’s bankruptcy announcement from solar company Solyndra LLC, some have called into question Washington’s ability to manage financial risk. Conservative critics contend that the government is incapable of accurately pricing risk, and that political pressure encourages government agencies to routinely underestimate the risk to taxpayers when extending credit.¶ Government underpricing of risk is a convenient theory for free-market ideologues but it runs contrary to the overwhelming evidence.¶ Our review of federal government credit programs back to 1992 shows that on average the government is quite accurate in its risk pricing. In fact, the majority of government credit programs cost less than originally estimated, not more. Specifically, we found that:¶ Based on initial estimates over the past 20 years, the government expected its credit programs to cost taxpayers 79 cents for every $100 loaned or guaranteed. Based on recently updated data, those cost predictions were reasonably accurate but slightly underestimated. The current budgetary impact of these programs is about 94 cents per $100 loaned or guaranteed.¶ There’s little evidence that credit programs are biased toward underpricing risk. In fact, a little more than half of all nonemergency federal credit programs will cost the government less than what they are expected to over the life of the program.¶ The remainder is accounted for by the losses suffered by the Federal Housing Administration on loans made in 2008 during the peak of the housing crisis. Excluding that book of loans, all nonemergency federal credit programs cost slightly less than expected.¶ Conservative critics often portray a world in which government bureaucrats haphazardly issue loans and loan guarantees without considering taxpayer exposure to risk. That’s simply not the case. This issue brief explains how the government prices credit risk in the federal budget, how well those cost estimates have reflected reality over the years, and why the government is in a particularly good position to assume certain types of risk.¶ Budgeting for credit risk¶ Federal government agencies adhere to strict budget and accounting standards to carefully assess the risks and potential losses associated with credit programs. Here’s how it works.¶ Before an agency can issue any loans or loan guarantees, Congress must first authorize and allocate funding for the program. In most cases Congress starts by determining how much money the program will be authorized to guarantee or loan and then appropriates a certain percentage of that amount to cover the program’s expected cost to the government. That cost estimate—assessed by both the agency administering the program and the president’s Office of Management and Budget—takes into account expected repayments, defaults, recoveries, and any interest or fees collected over the life of the loan, adjusted to current dollars.¶ The net cost to the federal government as a percentage of total dollars loaned or guaranteed is known as the subsidy rate. As an example, say Congress approves a $100 million loan guarantee program within the Department of Agriculture. The department models expected market conditions and loan activity and then estimates a subsidy rate, which the Office of Management and Budget independently estimates as a check on the agency’s methodology. Let’s say the estimated subsidy rate is 0.75 percent. That means the government expects to take a net loss of 75 cents for every $100 it guarantees over the life of those loans. To cover expected losses on the $100 million in loan guarantees, the government sets aside $750,000 in a special account at the Treasury Department. This is similar to a loan loss reserve at a private bank.¶ Each subsequent year, the Office of Management and Budget and the agencies recalculate the subsidy rate to reflect actual loan performance, current economic conditions, and anything else administrators may have learned about a program. These revised numbers are reported in the president’s budget each year, which gives us a pretty good idea of each program’s “actual” costs and the government’s ability to assess financial risk.¶ If conservative claims were accurate in saying that the federal government cannot accurately price for risk, then one would expect the initial cost estimates to be significantly lower than the more recent re-estimates. Using the Department of Agriculture example above, if the critics were right, the re-estimated subsidy rate would presumably be much higher than 0.75 percent, and actual outlays would be higher than estimated. Let’s see how the government’s risk estimates actually stack up.¶ Government risk estimates are quite accurate¶ To test this theory, we analyzed credit data published in the president’s 2013 budget. We compared initial and updated cost estimates, also known as subsidy re-estimates, for each book of nonemergency loans and loan guarantees for each federal credit program since 1992, the first year for which comprehensive data are available.¶ We limit our analysis to nonemergency credit programs, omitting programs created in response to the recent financial crisis. This includes programs created through the Troubled Asset Relief Program—the so-called Wall Street rescue package passed by Congress at the height of the housing and financial crises—and the U.S. Department of the Treasury’s purchase of securities issued by the two troubled housing finance giants Fannie Mae and Freddie Mac. Both of these programs are temporary, atypically large, and are accounted for in the federal budget using different standards than all other credit programs.¶ If we had included these “emergency” programs, it would drastically skew the overall results—but skew them in favor of our basic argument. Based on our analysis of data published in the 2013 budget, these programs will cost the government about $130 billion less than initially expected. So their inclusion would make it seem as though the government significantly overestimated the cost of all credit programs over the past 20 years, which is not the case.¶ We also exclude any federal credit program that is not listed in the federal credit supplement of president’s budget, and any program that did not publish a subsidy re-estimate in the 2013 budget. We do this both because complete data are unavailable for these programs and because their costs are not recorded in the federal budget. Notably, this includes insurance programs through the Federal Deposit Insurance Corporation, mortgage guarantees offered by the two housing finance giants Fannie Mae and Freddie Mac (both now under government conservatorship), and guarantees on mortgage-backed securities offered by the government corporation Ginnie Mae.¶ Here’s what we found out about nonemergency federal credit programs. Federal agencies have issued $5.7 trillion worth of these loans or loan guarantees since 1992. Based on our analysis of initial estimates, the government expected these programs to cost taxpayers about 79 cents for every $100 loaned or guaranteed, or a 0.79 percent subsidy rate overall.¶ Of course, no one expects those estimates to be perfect. Many of these loans such as home mortgages or funding for large infrastructure projects take decades to pay back. Government financial analysts are charged with the difficult task of modeling payments, defaults, recoveries, and market conditions for the entire life of the loan, so some error has to be expected.¶ But as it turns out, the initial estimates weren’t very far off. The current budgetary impact of these credit programs is about 94 cents per $100 loaned or guaranteed, or a 0.94 percent subsidy rate, according to our analysis of updated subsidy estimates. To put that in a budgetary context, while issuing nearly $6 trillion in loans and guarantees over the past 20 years, the government initially predicted about $45 billion in total costs to taxpayers, but the actual costs were slightly higher—about $53 billion.¶ That difference—$8 billion over two decades or $400 million per year—might seem high at first. But it amounts to just 0.15 percent of the total dollars loaned or guaranteed by the government and 0.02 percent of all government spending over that period.(see Figure 1)¶ Of course, the federal government’s performance on individual programs varied substantially. Some programs overestimate risks, while others underestimate. But as mentioned above, some conservatives argue that political pressures cause the government to systemically underprice costs to taxpayers when issuing loans or guarantees.¶ The data show this to be untrue. Of the 104 nonemergency credit programs administered since 1992, our analysis shows that most have actually overestimated total subsidy costs. Fifty-six programs overpriced risk over their lifetimes, while 48 programs underpriced risk. (see Figure 2)¶ Our analysis only takes into account lifetime costs for each program, not the federal government’s ability to estimate costs on an individual year’s portfolio of loans. Indeed, critics often point to individual data points such as the Solyndra bankruptcy as evidence of the government’s inability to price financial risk. But what matters most is actually the net budgetary impact over time of these inaccuracies, which is what is measured in Figure 1.¶ Overall these overestimates and underestimates—whether across programs or in individual books of business—tend to roughly balance out in the long run, give or take a reasonable margin of error. As we show in the following section, however, all of these underestimated losses can actually be attributed to a single year of mortgage guarantees made at the height of the housing crisis.

#### Government support is vital-~--it overcomes financial barriers to nuclear that the market cannot

Yanosek 12 Kassia, entrepreneur-in-residence at Stanford University’s Steyer-Taylor Center for Energy Policy and Finance and a private equity investor in the energy sector as a principal at Quadrant Management and Founder of Tana Energy Capital LLC, " Financing Nuclear Power in the US", Spring, energyclub.stanford.edu/index.php/Journal/Financing\_Nuclear\_Power\_by\_Kassia\_Yanosek

Over the course of the last decade, it appeared that concerns about carbon emissions, aging coal fleets, and a desire for a diversified generation base were reviving the U.S. utility sector interest in building new nuclear plants. Government and companies worked closely on design certification for Generation III reactors, helping to streamline the licensing process. New loan guarantees from the federal government targeted for nuclear projects were created as part of the 2005 Energy Policy Act. Consequently, dozens of projects entered the planning stages. Following more than 30 years in which no new units were built, it looked as if the U.S. nuclear industry was making significant headway. However, it is yet to be seen how many new nuclear projects will actually make it beyond blueprints due to one of the largest barriers to new nuclear construction: financing risk. Large upfront capital costs, a complex regulatory process, uncertain construction timelines, and technology challenges result in a risk/return profile for nuclear projects that is unattractive for the capital markets without supplementary government or ratepayer support. To many investors, nuclear seems too capital-intensive. Nuclear energy has attractive qualities in comparison to other sources of electricity. A primary motivation to pursue the development of nuclear energy in the U.S. has been its low operating fuel costs compared with coal, oil, and gas-fired plants. Over the lifetime of a generating station, fuel makes up 78% of the total costs of a coal-fired plant. For a combined cycle gas-fired plant, the figure is 89%. According to the Nuclear Energy Institute, the costs for nuclear are approximately 14%, and include processing, enrichment, and fuel management/disposal costs. Today’s low natural gas prices have enhanced the prospects of gas-fired power, but utilities still remain cautious about over-investing in new natural gas generation given the historical volatility of prices. Furthermore, nuclear reactors provide baseload power at scale, which means that these plants produce continuous, reliable power to consistently meet demand. In contrast, renewable energies such as wind or solar are only available when the wind blows or the sun shines, and without storage, these are not suitable for large-scale use. Finally, nuclear energy produces no carbon emissions, which is an attractive attribute for utilities that foresee a carbon tax being imposed in the near future. Given nuclear’s benefits, one may wonder why no new nuclear units have been ordered since the 1970s. This hiatus is in great part due to nuclear’s high cost comparative to other alternatives, and its unique set of risks. As a result, financing nuclear has necessitated government involvement, as the cost of nuclear typically exceeds that of the cost of conventional generation technologies such as coal and natural gas fired generation on a levelized cost of energy (LCOE) basis. LCOE represents the present value of the total cost of building and operating a generating plant over its financial life, converted to equal annual payments and amortized over expected annual generation, and is used to compare across different power generation technologies. For both regulated utilities and independent power producers, nuclear is unattractive if the levelized cost exceeds that of other technologies, since state utility commissions direct regulated utilities to build new capacity using the technology with the lowest LCOE. Furthermore, capital costs are inherently high, ranging in the billions or tens of billions of dollars, and are compounded by financing charges during long construction times. Without government support, financing nuclear is currently notpossible in the capital markets. Recently, Constellation Energy and NRG separately pulled the plug on new multi-billion dollar plants, citing financing problems. Projects, however, will get done on a one-off basis. Southern Company’s Vogtle Plant in Eastern Georgia is likely to be the sponsor of the first new generation to be constructed, taking advantage of local regulatory and federal support. Two new reactors of next-generation technology are in the permitting stage, which will bring online 2,200 megawatts (MW) of new capacity, and will cost $14 billion. The project will take advantage of tax credits and loan guarantees provided in the 2005 Energy Policy Act.

#### And, loan guarantees solve nuclear expansion – shows investors the government has skin in the game, and incentivizes quick agency approval

Adams 10—Publisher of Atomic insights Was in the Navy for 33 years Spent time at the Naval Academy Has experience designing and running small nuclear plants (Rod, Concrete Action to Follow Strongly Supportive Words On Building New Nuclear Power Plants, atomicinsights.com/2010/01/concrete-action-to-follow-strongly-supportive-words-on-building-new-nuclear-power-plants.html)

Loan guarantees are important to the nuclear industry because the currently available models are large, capital intensive projects that need a stable regulatory and financial environment. The projects can be financed because they will produce a regular stream of income that can service the debt and still provide a profit, but that is only true if the banks are assured that the government will not step in at an inopportune time to halt progress and slow down the revenue generation part of the project. Bankers do not forget history or losses very easily; they want to make sure that government decisions like those that halted Shoreham, Barnwell’s recycling facility or the Clinch River Breeder Reactor program are not going to be repeated this time around. For the multi-billion dollar projects being proposed, bankers demand the reassurance that comes when the government is officially supportive and has some “skin in the game” that makes frivolous bureaucratic decisions to erect barriers very expensive for the agency that makes that decision. I have reviewed the conditions established for the guarantee programs pretty carefully – at one time, my company ([Adams Atomic Engines, Inc.](http://www.atomicengines.com)) was considering filing an application. The loan conditions are strict and do a good job of protecting government interests. They were not appropriate for a tiny company, but I can see where a large company would have less trouble complying with the rules and conditions. The conditions do allow low or no cost intervention in the case of negligence or safety issues, but they put the government on the hook for delays that come from bad bureaucratic decision making.

#### Plan is modeled internationally

**Blees et al** 11 (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) <http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/>

There are many compelling reasons to pursue the rapid demonstration of a full-scale IFR, as a lead-in to a subsequent global deployment of this technology within a relatively short time frame. Certainly the urgency of climate change can be a potent tool in winning over environmentalists to this idea. Yet political expediency—due to widespread skepticism of anthropogenic causes for climate change—suggests that the arguments for rolling out IFRs can be effectively tailored to their audience. Energy security—especially with favorable economics—is a primary interest of every nation.¶ The impressive safety features of new nuclear power plant designs should encourage a rapid uptick in construction without concern for the spent fuel they will produce, for all of it will quickly be used up once IFRs begin to be deployed. It is certainly manageable until that time. Burying spent fuel in non-retrievable geologic depositories should be avoided, since it represents a valuable clean energy resource that can last for centuries even if used on a grand scale.¶ Many countries are now beginning to pursue fast reactor technology without the cooperation of the United States, laboriously (and expensively) re-learning the lessons of what does and doesn’t work. If this continues, we will see a variety of different fast reactor designs, some of which will be less safe than others. Why are we forcing other nations to reinvent the wheel? Since the USA invested years of effort and billions of dollars to develop what is arguably the world’s safest and most efficient fast reactor system in the IFR, and since several nations have asked us to share this technology with them (Russia, China, South Korea, Japan, India), there is a golden opportunity here to develop a common goal—a standardized design, and a framework for international control of fast reactor technology and the fissile material that fuels them. This opportunity should be a top priority in the coming decade, if we are serious about replacing fossil fuels worldwide with sufficient pace to effectively mitigate climate change and other environmental and geopolitical crises of the 21st century.

#### IFR’s S-PRISM design is really safe

**Blees et al 11** (Tom Blees1, Yoon Chang2, Robert Serafin3, Jerry Peterson4, Joe Shuster1, Charles Archambeau5, Randolph Ware3, 6, Tom Wigley3,7, Barry W. Brook7, 1Science Council for Global Initiatives, 2Argonne National Laboratory, 3National Center for Atmospheric Research, 4University of Colorado, 5Technology Research Associates, 6Cooperative Institute for Research in the Environmental Sciences, 7(climate professor) University of Adelaide, "Advanced nuclear power systems to mitigate climate change (Part III)," 2/24/11) http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/-http://bravenewclimate.com/2011/02/24/advanced-nuclear-power-systems-to-mitigate-climate-change/

Metal Fuel: The Ultimate Safety Valve¶ One of the most important of the many superlatives of the IFR is its use of a metal fuel comprised of uranium, plutonium and zirconium, and the ingenious manner in which the Argonne team solved the problems of fuel expansion and fuel fabrication, as well as the potentially dangerous overheating scenario. Unlike the fuel fabrication of oxide-fueled reactors that requires the dimensions of the fuel pellets to be uniform to very exacting tolerances, the metal fuel for the IFR can be simply injected into molds and then cooled and inserted into metal tubes (cladding) with a great deal of dimensional tolerance, with a sodium bond filling any voids. If an accident situation occurs that would cause the core to overheat, such as a loss of coolant flow accident, the metal fuel itself will expand, causing neutron leakage to terminate the chain reaction, relying on nothing but the laws of physics.¶ The passive safety characteristics of the IFR were tested in EBR-II on April 3, 1986, against two of the most severe accident events postulated for nuclear power plants. The first test (the Loss of Flow Test) simulated a complete station blackout, so that power was lost to all cooling systems. The second test (the Loss of Heat Sink Test) simulated the loss of ability to remove heat from the plant by shutting off power to the secondary cooling system. In both of these tests, the normal safety systems were not allowed to function and the operators did not interfere. The tests were run with the reactor initially at full power.¶ In both tests, the passive safety features simply shut down the reactor with no damage. The fuel and coolant remained within safe temperature limits as the reactor quickly shut itself down in both cases. Relying only on passive characteristics, EBR-II smoothly returned to a safe condition without activation of any control rods and without action by the reactor operators. The same features responsible for this remarkable performance in EBR-II will be incorporated into the design of future IFR plants, regardless of how large they may be [xi].¶ While the IFR was under development, a consortium of prominent American companies led by General Electric collaborated with the IFR team to design a commercial-scale reactor based upon the EBR-II research. This design, currently in the hands of GE, is called the PRISM (Power Reactor Innovative Small Module). A somewhat larger version (with a power rating of 380 MWe) is called the S-PRISM. As with all new nuclear reactor designs (and many other potentially hazardous industrial projects), probabilistic risk assessment studies were conducted for the S-PRISM. Among other parameters, the PRA study estimated the frequency with which one could expect a core meltdown. This occurrence was so statistically improbable as to defy imagination. Of course such a number must be divided by the number of reactors in service in order to convey the actual frequency of a hypothetical meltdown. Even so, if one posits that all the energy humanity requires were to be supplies solely by IFRs (an unlikely scenario but one that is entirely possible), the world could expect a core meltdown about once every 435,000 years [xii]. Even if the risk assessment understated the odds by a factor of a thousand, this would still be a reactor design that even the most paranoid could feel good about.

#### IFR fuel can be obtained from seawater – makes energy infinite

Archambeauet all 11 [The Integral Fast Reactor (IFR): An Optimized Source for Global Energy Needs, Charles Archambeau, Science Council for Global Initiatives, Randolph Ware, Cooperative Institute for Research in Environmental Sciences, Tom Blees, National Center for Atmospheric Research, Barry Brook, University of Adelaide, Jerry Peterson, Argonne National Laboratory,¶ Yoon Chang, University of Colorado, February 2011]

The pyroprocessor unit can be used as a stand-alone system to process LWR waste from¶ any open cycle reactor into fuel for IFR closed cycle reactors. The depleted Uranium¶ produced by the enrichment of Uranium ore can also be processed to generate additional¶ IFR fuel. The current amount of LWR waste, plus the amount of depleted Uranium in¶ stock piles world-wide, is sufficient to supply fuel to all the IFR plants needed and in fact¶ to supply the world's required energy for about 1000 years.3 The problem of storage of¶ current LWR waste and depleted Uranium waste from refining of mined Uranium is¶ therefore solved by pyroprocessor generation of IFR fuel, along with a relatively small¶ mass of short-lived fission products which can be easily and safely stored. Uranium can¶ also be extracted from sea water using IFR power sources (see, for example, Cohen, 1983).¶ Because Uranium is constantly added to seawater by erosion processes, then the IFR fuel¶ source is effectively unlimited. Therefore, IFR power plants do not require fuel from¶ regular mining operations, as does a LWR powered plant, but can use pyroprocessor¶ generated fuel essentially indefinitely. In this sense the IFR is a "renewable" energy source¶ which can be expanded, essentially indefinitely, to meet demand.

#### Manhattan Project approach key to catalyze quick investment in IFRs – perception is non-unique, there is government investment now

**Kirsch 9** [Steve Kirsch, founder and CEO of multiple tech companies collectively worth over %241 billion and MS in Electrical Engineering and Computer Science from MIT, November 2009, "Why We Should Build an Integral Fast Reactor Now,"]

Q. If this is really so good, how come GE isn't building S-PRISM on their own nickel?¶ Nobody wants to risk it since it isn't a slam dunk. You don't get a reward if you solve global warming. And government funding doesn't seem to be so easy. DOE tried to get funding for GNEP (which included IFR technology) and got shot down (so far).¶ GE is a large conservative corporation. They already service a fleet of lightwater reactors, are building more of them around the world, and have the promise of yet more. It's hard enough in this country to move into new levels of reactor technology without trying to leapfrog straight into the 4th generation. Their 3rd generation ESBWR is in the 5th round of NRC certification, whereas the S-PRISM (a souped up and more developed version of the PRISM) isn't at the starting gate. These things take years at the glacial pace of the NRC, though of course if President Obama decided to go all Manhattan project on it we could most definitely get there quickly enough. If GE started pushing 4th generation breeder reactors, can you imagine the hue and cry from the antie groups? What's their incentive to do that? If they're convinced that ultimately we'll end up at 4th generation reactors anyway and they can make plenty of dough and keep a low profile just taking the go slow approach, don't you imagine that's exactly what they'll do? Besides, conceivably another country with whom we have nuclear technology sharing agreements might very well certify and build it before the NRC ever gets out of the starting gate, which would make it much easier for the eventual NRC certification. Q. If this is really so good, how come someone in government isn't trying to get it restarted?¶ The DOE is attempting to resuscitate fast-reactor technology, as part of the GNEP (Global Nuclear Energy Partnership) initiative. See¶ http://www.gnep.energy.gov/gnepPRs/gnepPR011007.html, and http://www.gnep.energy.gov/.¶ The IFR is one form of fast-reactor technology (metallic fuel with pyroprocessing), but there are others -- inferior, according to the IFR scientists. The important thing these days is to get the U.S. back into a leadership role in the development and management of nuclear power, recognizing that recycling in fast reactors is necessary if the long-lived waste is to be consumed, and if the full energy potential of the uranium is to be exploited. The GNEP would resuscitate fast-reactor technology in this country.

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### Solvency – AT: Loan Gs Bad

#### Federal loan guarantees causes market expansion – catalyzes capital investment

I21CE 11 Institute for 21st Century Energy, Mission of the U.S. Chamber of Commerce Institute for 21st Century Energy is to unify policymakers, regulators, business leaders, and the American public behind a common sense energy strategy to help keep America secure, prosperous, and clean, "Commit to and Expand Nuclear Energy Use", 2011 is copyright date, www.energyxxi.org/commit-and-expand-nuclear-energy-use

Nuclear power is currently an emissions-free source of 20% of America’s electricity supply, despite our not having licensed the construction of a nuclear power facility in nearly 30 years. Expansion of new nuclear power assets is essential to meet our projected growing demand while mitigating our emissions of CO2. As required by law, the federal government must provide authorized fiscal incentives for new nuclear power plants. We must solve our long-term nuclear waste challenges and aggressively expand efforts to recycle used nuclear fuel. Nuclear power is the nation’s largest emissions-free source of electricity. From a life-cycle perspective—including the impacts of uranium mining, uranium enrichment, fuel fabrication, plant construction, and fuel disposal—nuclear power offers a huge emissions advantage over any other large-scale method of baseload power generation and is on par with renewable sources. Nuclear power currently supplies about 20% of America’s electricity supply. America’s 104 operating nuclear power reactors are also the cheapest source of baseload electricityon a per-kilowatt-hour basis because operational and fuel costs are comparatively low. Although the existing nuclear units are successfully renewing their operating licenses for an additional 20 years, new nuclear power plants are essential to meet growing demand while avoiding GHG emissions. New nuclear power plants are capital-intensive, requiring an estimated $6–8 billion (2008 dollars) per plant. The U.S. electric power sector consists of many relatively small companies that do not have the size, financing capability, or financial strength to fund power projects of this scale on their own, in the numbers required. Outside financial support is necessary. The loan guarantee program authorized by EPAct2005 is a crucial tool to enable utilities to finance the construction of new reactors by increasing access to capital and enabling a higher share of leveraged debt. DOE estimates that by enabling a utility to rely more heavily on private debt than more expensive equity, a federal loan guarantee may save the ratepayers nearly 40% in the cost of power from a new nuclear plant. A well-managed loan guarantee program will be funded by project applicants and not require any expenditure of government funds. Unfortunately, the loan guarantee program has not been implemented effectively by the DOE, and the $18.5 billion in loan volume authorized by Congress for nuclear power projects is inadequate, given the estimated cost of a new nuclear power plant. That loan volume will support, at best, two, or three new projects. The current program should be expanded, and at the appropriate time merged with the Clean Energy Bank of the United States discussed earlier. The time it takes to license and build a nuclear power plant—now estimated at a minimum of eight years—is one reason the financing costs are high. The Nuclear Regulatory Commission (NRC) estimates it will take three and one-half years to review the first wave of new license applications for new designs. This period must be reduced for subsequent applications without compromising safety, and Congress must ensure the NRC has adequate resources to process license applications as expeditiously as possible. The regulatory and licensing framework has improved significantly since the 1980s, when we saw completed plants sit idle while awaiting issuance of operating licenses, but the NRC has yet to issue a Construction and Operating License under the new process. Project sponsors and investors have significant questions about whether the new process will deliver timely approvals. Delays in starting up a completed plant will subject its owners to substantial financial costs. The standby support program, established in EPAct2005, could be an effective insurance policy for nuclear plant owners against delays in the regulatory process or from litigation outside of the plant owner’s control. While this is a potentially useful tool to encourage first-movers to test the process, several changes are necessary to broaden the scope of the coverage. As currently structured, the statutory liability cap is now too low and does not reflect today’s market costs.

#### ZERO uniqueness – entire history of US energy development empirically disproves your turns

Stephen Lacey (writer for Clean Technica) September 2012 “ Why Do We Hold Renewable Energy to a Different Standard than Fossil Fuels & Nuclear Energy” http://cleantechnica.com/2012/09/01/why-do-we-hold-renewable-energy-to-a-different-standard-than-fossil-fuels-nuclear-energy/

Now that renewables are receiving some of the same incentives that fossil fuels have enjoyed for nearly one hundred years, we’re suddenly being inundated with calls for a purely “free-market” approach to energy development from politicians on the right and companies concerned about the growth of clean energy. Their arguments make for good sound bites. But if we take a look at the history of energy development in the U.S., it’s very clear that we’ve never had a truly “free” market. In fact, all of the technologies that dominate our energy system today were given special incentives by the government in order to get them to commercial scale. According to a recent report from the venture capital firm DBL Investors, the U.S. coal, oil, gas, and nuclear industries have cumulatively taken in more than $630 billion in tax credits, land grants, R&D programs, and direct investments from the government. That far surpasses the roughly $50 billion in government renewable energy investments (wind, solar PV, solar thermal, geothermal, biofuels) through these same mechanisms over the decades, according to the report.

### A2 SoKo DA

#### No link – the plan’s leverage is economic in origin, not political, which already exists now – Obama’s stance is inevitable now, so only the plan can solve by promoting safe reprocessing

**Viski 12** [“It's Not as Easy as 1-2-3 : The Obama Team Fights over How to Promote Nuclear Energy Without Promoting Nuclear Weapons”, Foreign Policy, Andrea, foreign policy analyst, August 1, 2012]

In 2009, the United States seemed to signal a hard-line approach when it agreed to cooperate with the United Arab Emirates (UAE) on civilian nuclear technology only on the condition that the country not pursue the ability to enrich uranium to make fresh nuclear fuel or to reprocess plutonium from spent nuclear fuel to recycle it in reactors. These technologies, as every casual Iran watcher now knows, are the same as those used to make fissile material for a nuclear bomb. Officials from George W. Bush's administration subsequently described the UAE pledge as the "gold standard" for new nuclear cooperation accords -- known as "123 agreements."¶ The Obama administration has been more hesitant, saying instead that each new 123 agreement would be negotiated on a case-by-case basis. In other words, the administration would try to replicate the ban on enrichment and reprocessing when possible, while strongly suggesting that the UAE was a unique circumstance. That disappointed many nonproliferation experts -- both within the administration and without -- who believed that Washington was surrendering an opportunity to stem the spread of enrichment and reprocessing technology, even as the president continued to warn of the danger from weapons-usable nuclear material falling into the wrong hands. The gold standard languished in another policy review while the administration continued to negotiate 123 agreements -- until last week anyway, when, according to a report published in National Journal, the State Department made a play for a new 123 agreement with Taiwan.¶ The Obama administration largely finds itself an accidental architect of the new civil nuclear order. In addition to a new wave of countries seeking nuclear help from the United States, many 123 agreements that were negotiated 30 years ago -- during the last wave of enthusiasm for nuclear power -- will expire between now and 2014. When this flurry of activity ends, the United States will have negotiated more than a dozen nuclear cooperation agreements in a four-year period, many with the most important emerging nuclear powers. Dick Stratford, a senior State Department official, told a conference that he carried around a little list in his pocket because he had trouble keeping all the negotiations straight.¶ Although the moment is largely one of circumstance, the Obama administration has revealed a distinct philosophical approach, taking a market-oriented approach to discouraging new countries from building their own facilities for enrichment and reprocessing (sometimes called "ENR"). In practice this means exploring how to offer fuel-cycle services at reasonable prices and providing assurances that states that rely on the market, rather than their own capabilities, will not have their supply of fuel disrupted. The thinking goes that the United States can best discourage states from developing their own enrichment and reprocessing capabilities by ensuring that the nuclear industry provides such comprehensive fuel services as part of any agreement to sell nuclear reactors. If that helps U.S. industry and its international partners, all the better. (This is not yet a capability that U.S. industry can provide, particularly in the arena of taking back spent nuclear fuel.) The Obama administration has also supported the creation of separate U.S. and International Atomic Energy Agency (IAEA) "fuel banks" that would provide states that relied on the market a supplier of last resort in the event of a disruption in the supply of nuclear fuel.

#### No ENR enforcement – makes reprocessing inevitable

**Viski 12** [“It's Not as Easy as 1-2-3 : The Obama Team Fights over How to Promote Nuclear Energy Without Promoting Nuclear Weapons”, Foreign Policy, Andrea, foreign policy analyst, August 1, 2012]

So far, however, the administration has been reluctant to put the squeeze on potential partners. Many Obama officials took the view outlined by Poneman in his article -- that asking states to renounce ENR could make the situation worse. (It is important to note that I am not aware of Poneman's view inside the interagency deliberations.) So the administration has largely avoided pressuring states to renounce enrichment and reprocessing capabilities. Despite early talk of the "gold standard," this January the administration announced it would take what officials described as a case-by-case approach. In bureaucratic terms, this amounts to having no standard at all. It is hard to imagine a less restrictive policy. I suppose the administration could announce it would not even try. As it is, they will try -- but not very hard.

#### American support of pyroprocessing solves international integration of bad forms of technology

**Peters 12** [“Recycling Used Nuclear Fuel: Balancing Energy and Waste Management Policies”, Testimony to U.S. House of Representatives, Committee on Foreign Affairs, Subcommittee on Asia and the Pacific, Mark T. Peters, Deputy Laboratory Director for Programs at Argonne, National Laboratory, American Nuclear Society, June 6, 2012, khirn]

Pyroprocessing offers several potential benefits over current aqueous recycling techniques, such as the PUREX process being used in France and Japan today. These include the ability to recover minor actinides, which otherwise contribute significantly to the long-term radiotoxicity of used nuclear fuel; fewer releases of fission gases and tritium; and, the lack of production of pure plutonium, which helps to address proliferation concerns. Clearly, there will be engineering challenges inherent in the development of pyroprocessing technology, as there are with any other advanced manufacturing processes. However, these challenges can be addressed through joint research and development activities, and solving these challenges will have important implications for the United States as well as the Republic of Korea. The American Nuclear Society believes that nuclear fuel recycling has the potential to reclaim much of the residual energy in used fuel currently in storage as well as used fuel that will be produced in the future, and that recycling offers a proven alternative to direct disposal of used fuel in a geological repository. In other nations, recycling of nuclear fuel with proper safeguards and material controls, under the auspices of the International Atomic Energy Agency (IAEA), has demonstrated that high-level waste volumes can be reduced safely and securely while improving the sustainability of energy resources. It is the opinion of the ANS that **the United States should begin planning a thoughtful and orderly transition to nuclear fuel recycling** in parallel with the development of a geologic repository. Recycling would enhance the repository’s efficiency, eliminating the need for most complex and expensive engineered barriers and reducing the timeframe of concern from more than 100,000 years to a few hundred years. The ANS also believes that the United States should accelerate development of fast spectrum reactors, which are uniquely capable of generating energy while consuming long-lived waste. Six decades ago, on December 20, 1951, scientists and engineers from Argonne National Laboratory started a small electrical power generator attached to an experimental fast reactor, creating enough energy to power four 200-watt electrical bulbs. That historic achievement demonstrated the peaceful use of nuclear energy and launched today's global commercial nuclear energy industry. But it should not be overlooked that the first electricity generated through nuclear energy was produced using a fast reactor.3 In closing, let me reiterate that the ANS believes that nuclear energy has a significant role to play in meeting the global energy demands of the 21 st century, and that a global expansion of nuclear energy can be achieved safely and securely.

#### Wrong – transparency, ROK history, and government moderation disprove – plus North Korean transgressions prove its inevitable

**Lee, 12** - Lee Byong-Chul is a Senior Fellow at the Institute for Peace and Cooperation in Seoul. (Byong-chul, Asia Sentinel, 6/12, “US Must Rethink Stance on Korea Nuke Pact”

<http://www.asiasentinel.com/index.php?option=com_content&task=view&id=4586&Itemid=395>)

South Korea is a stable, pro-western country and has already signed a nuclear agreement with the US -- the agreement that has greatly contributed to the development of South Korean nuclear industry but which needs to reflect the changed environment of the global nuclear market as well as domestic demands in recent years. What’s more, Seoul is a signatory to the Nuclear Nonproliferation Treaty, which explicitly allows participants to enrich uranium for peaceful power production. And there is no denying that South Korea will likely reaffirm its willingness for transparency on all matters relating to the production of nuclear power plants.

Why should South Korea be denied the right to use its own technology to reprocess spent nuclear fuel? Why suspect this country of doing exactly what it has said it has no intention of doing? Why deny South Korean nuclear technology out of fear of some “worst-case scenario” that would see the current situation replaced by one that attempts to develop a bomb? It’s the Communist North Korea that America should have focused on for the proliferation of nuclear weapons, not its ally South Korea.

South Korea has been negotiating with the United States to resolve the direction and depth of the agreement. My assumption is that both countries have committed themselves to a dual-track approach: how to amend the existing nuclear agreement on the one hand and on the other, to research the pyro-processing technologies independently or cooperatively, one of the most hotly contested issues, which has been stalled for a long time.

Ranking with Japan in historic and economic significance, South Korea is a great believer in peace and stability in an uncertain region. Long ago, for example, the government expressed its unreserved support for peace and stability on the Korean peninsula with no regard to North Korea’s numerous violations over denuclearization, as if Washington negotiators are “straining at a gnat and swallowing a camel.”

Opponents of South Korean nuclear policy point out that there is a certain risk in allowing Seoul to reprocess spent fuel and enrich uranium because of its past record, but the risk in accepting Seoul’s request is far smaller. There is much more at stake here than American negotiators’ firm stance to ban the reprocessing of spent fuel. This is about the fundamental question: What is America to us?

Almost 30 years have gone since I entered university. Koreans’ perceptions of America are no longer shaped only by what America did during the 1950-53 Korean War. Sadly, however, plenty of conservative people still claim that “We should not forget that American blood in the Korean War had fertilized the land well.” Now is not the 1950s or 1980s. The memories of democratization, not to mention the war, are like shadows lengthening at dusk. Even those are bound to fade one day.

The US should strengthen those who want peace and stability in the region, since I don’t believe the nuclear sticks the US is using are the right leverage. The US must remember that pragmatic rationalists are here in the South Korean government, enjoying economic success and political freedom rather than the dire situation facing a nuclear armed North Korea. Like American negotiators, South Korean ones think that under a free and democratic political regime, the government is fundamentally wedded to stabilizing the system as a whole.

#### War won’t escalate

**Lankov 1/12**—Russian scholar of Asia and a specialist in Korean studies, attended Pyongyang's Kim Il-sung University, professor of history at Kookmin University in Seoul, PhD (Andrei, 12 January 2011, “Push could soon turn to shove,” http://www.atimes.com/atimes/Korea/MA12Dg02.html, RBatra)

**Far more likely, though, is that the situation will remain under control**. In this case, the excessive reaction by the South Koreans is likely to amplify the message their North Korean adversaries want to deliver.

North Korean strategists want to damage the South Korean economy as well as create domestic tension, which will eventually turn the South Korean public against the current South Korean government and its North Korean policy. However, if such an exchange of fire happens we can be certain that the international media will not be merely writing about a "war that is about to start in Korea" but rather will declare that a "war started in Korea". The impact of such reports on the world markets and, eventually, on the South Korean economy is easy to predict.

### A2 Free Market Counterplan

#### Free market sucks – creates short-term market unable to adjust to long-term outcomes

**Peskoe 12** [Ari Peskoe, associate in the law firm of McDermott Will and Emery LLP and focuses his practice on regulatory, legislative, compliance, and transactional issues related to energy markets, 4-20-2012, "A Solution Looking For a Problem: Building More Nuclear Reactors after Vogtle," The Electricty Journal, vol 25 issue 3, Science Direct]

IV. Mandating that Markets Value the Long-Term¶ In organized wholesale electricity markets, generators must recover capital costs in a competitive market rather than through a ratemaking process. Given the low price of natural gas, it is difficult to make a business case for investing today in new reactors. Over the long term, gas prices may rise and the nation's coal and nuclear base load plants continue to age, which could create opportunities for nuclear.68 This section will highlight the current mismatch between market outcomes and public policy goals, provide examples of how regulators have layered public policy goals on top of electricity markets, and suggest that renewable mandates may provide a useful starting point for policymakers hoping to provide the right environment for new reactor construction in the coming decades.¶ In organized wholesale markets, power is traded on day-ahead and/or real-time markets. The premise is that markets match bids to buy energy with suppliers’ offers to sell energy thereby “enabl[ing] an area-wide optimization process designed to meet electricity demand at the lowest cost, given the operational and reliability limitations of the area's generation fleet and transmission system.”69 This “optimization process” aims to instantaneously minimize system costs based on several short-term variables, such as transmission constraints, ramp rates, and net generation. The process has spawned an array of tradable products, such as financial transmission rights and non-spinning reserves.¶ One widely recognized issue with organized wholesale electricity markets is whether they can “deliver adequate and timely investment signals to ensure security of supply…[and] appropriate incentives for diversification to deliver the macroeconomically optimal fuel diversity.”70 In organized wholesale markets, profit-motivated firms favor investments in projects with shorter lead times, lower upfront capital costs, rapid cost recovery, and overall less risk. Based on these factors, investing in new natural gas capacity is far more attractive than financing a new nuclear reactor. Indeed, while construction of natural-gas-fired generation has increased dramatically around the country, the trend is most pronounced in organized wholesale markets.71¶ To rectify shortcomings of the market optimization process, regulators mandated generation investment through installed capacity auctions.72 These auctions require load-serving entities (LSE), those companies that sell power to end users or consume it themselves, to bid on sufficient generation capacity to meet projected peak load plus a reserve margin. The purposes of capacity auctions are to require every LSE to pay its share of fixed/capital costs of generators in the system and to pay for fixed/capital costs of generators that are required to maintain system reliability but that are not earning sufficient revenue from just selling energy.73 Generators then earn payments both on a per-unit basis for the power they produce and sell into day-ahead and real-time markets and for the total capacity available to the market through capacity auctions. Capacity auctions are designed to correct for rules that prohibit the market price of energy from reaching its full value during times of peak demand.74¶ With capacity auctions as an example, market regulators could create other products that monetize the value of assets that enhance the system but cannot be rationalized based on the market's rules and short-term marginal cost optimization process. There is already a precedent for a regional market organization requiring market participants to share the costs of a project that enhances the system. Under the Southwest Power Pool's Highway/Byway cost allocation methodology, costs of transmission upgrades that improve system reliability and relieve congestion are socialized across the network.75¶ In some markets — and perhaps even more so in the coming years — new nuclear capacity would substantially alter the fuel mix. While a diverse fuel mix may enhance the system, providing resiliency in the event of a commodity price spike or interruption, individual companies may not have an incentive to increase fuel diversity. As prices in an electricity market become increasingly linked to the price of natural gas, a company's best investment strategy may be to build additional natural-gas-fired capacity.76 One possible mechanism to share the cost of fuel diversity is to quantify the hedging value of a given quantity of non-gas generation across a region using an option valuation.77 LSEs would then pay their pro rata share with the proceeds going to developers of non-natural-gas-powered generation. Alternatively, regulators could mandate that LSEs be required to account for a certain quantity of non-natural-gas generation and run capacity auctions based on that premise. Regardless of the regulatory mechanism, legislators and market regulators have historically valued fuel diversity. If market prices place no value on it and individual firms have no incentive to create it, the choice is either to abandon fuel diversity or mandate it.¶ Critics of centralized “command and control” regulations believe that a better-designed wholesale electricity market can solve incentive problems without the need for added mandates like capacity auctions.78 The reality is that since the introduction of organized wholesale markets state regulators have instituted a range of additional mandates, often on local distribution companies (LDC) that sell power to end users, to make up for the mismatch of incentives between the market's design and public policy goals. Because the market places no value on renewables, legislators created renewable portfolio standards (RPS), and these mandates are in effect in most states that participate in an organized wholesale market.79 An RPS requires LDCs to procure an annually escalating amount of power from renewable sources. In many states, LDCs demonstrate compliance by holding sufficient renewable energy credits (RECs), which are sold by generators of renewable energy for each unit of electricity sold. Some states have additional requirements for specific renewable sources and mandate minimum percentages from solar.80 States also require LSEs to fund energy-efficiency investments81 and sign long-term power purchase agreements with renewable energy developers.82

#### The government can successfully pick winners better than the private sector – this is the hot fire

**Borrus and Stowsky, 97** – Berkeley (Michael and Jay, “Technology Policy and Economic Growth”, The Berkeley Roundtable on the International Economy, CIAO)

In fact, even accepting the critic's definition of the issue, there are limiting cases in which the reductionist conclusion about picking winners and losers is not defensible. **The most important is the development of new tech**nologies, for which markets are not entirely adequate institutions. As previously noted, empirical evidence suggests that as a result of spillovers of all kinds, the social returns to R&D spending on new technologies far exceed the private returns, perhaps by as much as 50 to 100%. 12 Appropriability problems lead to over-investment in some technologies and under-investment in others relative to the social optimum. 13

Markets also deal inadequately with technological progress because of the highly contingent nature of innovation. Rather than being preordained by scientific logic, technology development is contingent upon the actions of developers, producers and users, as they perform their respective roles, interact, and accrue different kinds of know-how over time. The contingent nature of technical progress means that perfect information is impossible; neither innovators nor the private capital markets that fund them are fully capable of accurately evaluating the risks involved. Therefore, private capital markets and innovators alike must misallocate their investment and effort. Some bets will pay off big; some not at all. Winners and losers can only be positively identified in the revealing gaze of hindsight.

This is as true for private as public investment. For every Apple Macintosh there are normally several Altairs and Amigas. For every IBM there are several GEs and RCAs whose technological bets on mainframe computers failed to pay off. For every Intel there are defunct Molectros and AMEs. For every winner in a venture portfolio, there are untold losers that get nowhere near the publicity. Indeed, there is absolutely no evidence, beyond the economist's leap of faith, that private investment is any more capable than public investment of separating the winners from the losers before the fact. The major difference is that private losers exit the market, while publicly backed losers are held to the higher standard of wasting taxpayers' money.

In short, picking winners and losers is the wrong metaphor to characterize the government's socially useful and necessary activity of supporting the process of innovation. Government is actually placing bets on our collective future. From the public standpoint, **the magnitude** of the potential social gains **is sufficiently large to provide a comfortable margin for error in choosing among technologies to back**. 14

#### The market can’t drive technological innovation by itself

**Newell and Wilson, 05 - \*** Senior Fellow at Resources for the Future AND \*\*economist with the Energy Information Administration (Richard and Nathan, “Technology Prizes for Climate Change Mitigation,” June, http://www.rff.org/documents/RFF-DP-05-33.pdf)

Even if there were not institutional impediments that prevented environmental costs from being accounted for in the marketplace, the level of research spending on climate change mitigation technologies would probably still fall short of the socially efficient level (Jaffe, Newell, and Stavins 2005). This reflects the fact that research is characterized by market imperfections that reduce incentives for investment. First, the benefits of developing a new technology or product do not accrue only to its discoverer. Rather, they spill over, benefiting society and other firms. This is the inverse of the pollution externality problem, where the benefits are concentrated in the polluter and the environmental damages are diffuse. Second, the impact of a technological advance tends to be positively associated with the extent of its adoption, which means that the innovating firm’s returns are contingent on factors beyond its control. If other firms develop compatible technologies, the innovator will benefit more, but if a different technological standard becomes the norm, the innovator’s profits will be markedly less. The implied uncertainty of being dependent on others’ behaviors could reduce firms’ incentives to innovate.

#### Cap and trade would collapse US competitiveness.

**Holecek – 11/7/08** (Andrea, *The Times*, “New environmental policy could hurt steelmakers, manufacturing,” http://nwi.com/articles/2008/11/07/business/business/docd02314e7dc222413862574f900781cbf.txt)

President-Elect Barack Obama's reported plan to implement a cap-and-trade policy to reduce carbon dioxide emissions could make the integrated steel industry noncompetitive, according to a noted steel analyst. Charles Bradford, president of New York-based Bradford Research Inc./Soleil Securities, said a cap-and-trade policy could put Northwest Indiana's large steelmakers out of business because of its high cost. The Alliance to Save Energy and other environmental organization are urging the president-elect to make good on his campaign promises to focus on energy efficiency, including a economy-wide cap-and-trade program, as a key solution to the nation’s energy, economic, and environmental challenges. "He (Obama) wants cap and trade where people have to pay for their carbon emissions," Bradford said. "Integrated steelmakers put out three times more carbon emissions than the minimills." Integrated steelmakers, such as U.S. Steel Corp. and ArcelorMittal, produce steel using a two-step process, first by heating a combination of iron ore, coke and limestone in blast furnaces to produce pig iron, which is then made into steel in basic oxygen furnaces. Minimills melt steel scrap metal in electric furnaces to produce steel. Bradford said the integrated companies currently are losing their competitiveness. "In the summer they (integrateds) were the low cost producers because the price of prime scrap was $878 a ton, now its $133 a ton," he said. "At the same time (the integrateds) steelmaking costs are $600 or closer to $700 a ton. The minimills are under $300 (per ton) when you add conversion costs." However, because minimills use considerably more electricity than integrated steelmakers, their costs could rise if energy production would become more expensive under a cap and trade policy. U.S. Steel Corp. spokesman John Armstrong, wouldn't comment on competitiveness issues between U.S. steelmakers. U.S. Steel's concern is that any U.S. carbon reduction program could put U.S. manufacturing as a whole at a disadvantage in the global marketplace **and force manufacturing offshore**, he said. "Our biggest concern about (carbon dioxide) reduction schemes is that unless developing countries are held to the same standards, **industry will go offshore**," Armstrong said. "One of the ultimate paradoxes is that it would increase rather than decrease (carbon dioxide) emissions because developing countries don't have the same efficiencies in production of electricity, and don't would have stringent emission requirements and could generate more (carbon dioxide)." Nancy Gravatt, spokeswoman for the American Iron and Steel Institute, said the steel industry is "very energy intense and its processes involve carbon. "It's part of the process so its obviously a major concern as to what type of legislative approach will be taken for carbon reduction," she said Global manufacturing competitiveness is a big concern, Gravatt said. "Coming into office in an economy in financial crisis, President-elect Obama would have to take U.S. manufacturing competitiveness into consideration as he evaluates climate policy," she said. The steel industry has advanced a global steel sectorial approach to a policy on climate change, Gravatt said. "It would be approach that holds foreign manufacturers to comparable standards so U.S. jobs stay in America," she said. "It would be more be more harmful to the environment if U.S. manufacturers migrate to foreign lands where they won't have to deal with U.S. emissions standards."

#### No solvency – free riders.

Lee **Lane**, resident fellow and codirector of the AEI Geoengineering Project, *American Enterprise Institute*, “ACESA 2009 and the U.S. National Strategy for Dealing with Climate Change,” 4/24/**2009**, http://www.aei.org/publications/pubID.29760/pub\_detail.asp

First, the U.S. could enact go-it-alone GHG controls and trust the moral appeal of its example to sway other nations.[8] While it is clearly true that the U.S. could not expect China and India to bear the costs of curtailing their GHG discharges unless it were willing to do the same, **it is quite another thing to leap from that statement to the assertion that the U.S. should act without firm pledges that other states will respond in kind**. The audacity of this leap has often been missed, but it merits real scrutiny. Does the United States conduct any other negotiation in this way? Did Congress, for example, as a prelude to the Uruguay or Doha Rounds, drop all U.S. tariffs and farm subsidies to zero? Did the U.S. win the withdrawal of Soviet conventional forces from Europe by first pulling its own troops out of Germany? Why, then, would we consider taking the functional equivalent of these steps in the area of GHG control? Or, to pose the same question in another way, how would ACESA's GHG reductions differ from the just-mentioned bargaining moves in trade or arms control? No one can claim that the answer is that the Chinese and Indian governments have signaled their readiness to respond in kind to U.S. GHG curbs. To the contrary, they continue to insist that the developed countries must commit to pay them for any control costs that they incur.[9] The Chinese and Indian governments' statements are consistent with their behavior. These countries are clearly more interested in dodging the costs of GHG curbs than in capturing the gains from a global control regime. ACESA could only harden their resolve. As other countries adopt GHG limits, China and India will make competitive gains by simply standing pat against controls. Over time, energy-intensive industries will migrate to the nations that reject controls. The growth in these states of energy-intensive capital and jobs

### A2 Sandy DA

#### Contingency plans

Reuters 10-26-12. www.haaretz.com/news/u-s-elections-2012/obama-romney-brace-for-hurricane-sandy-as-election-day-nears-1.472556

Election officials said they would do everything possible to ensure that voting goes on, even if problems from the storm persisted until November 6.¶ "I have heard from some states like Virginia and Maryland that they are definitely working on contingency plans for problems that may arise as a result of the storm," said Kay Stimson, communications director for the National Association of Secretaries of State.¶ "They are always preparing for any kinds of problems, any thing that could arise that could potentially pose problems for elections," she said.

#### No econ impact

Robert Jervis 11, Professor in the Department of Political Science and School of International and Public Affairs at Columbia University, December 2011, “Force in Our Times,” Survival, Vol. 25, No. 4, p. 403-425

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy and bring back old-fashioned beggar-my-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a preexisting high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

#### The economy is resilient

**Washington Times 2008** – chief political correspondent for The Washington Times (7/28, Donald Lambro, The Washington Times, "Always darkest before dawn", lexis, WEA)

The doom-and-gloomers are still with us, of course, and they will go to their graves forecasting that life as we know it is coming to an end and that we are in for years of economic depression and recession. Last week, the New York Times ran a Page One story maintaining that Americans were saving less than ever, and that their debt burden had risen by an average of $117,951 per household. And the London Telegraph says there are even harder times ahead, comparing today's economy to the Great Depression of the 1930s. Wall Street economist David Malpass thinks that kind of fearmongering is filled with manipulated statistics that ignore long-term wealth creation in our country, as well as globally. Increasingly, people are investing "for the long run - for capital gains (not counted in savings) rather than current income - in preparation for retirement," he told his clients last week. Instead of a coming recession, "we think the U.S. is in gradual recovery after a sharp two-quarter slowdown, with consumer resilience more likely than the decades-old expectation of a consumer slump," Mr. Malpass said. "Fed data shows clearly that household savings of all types - liquid, financial and tangible - are still close to the record levels set in September. IMF data shows U.S. households holding more net financial savings than the rest of the world combined. Consumption has repeatedly outperformed expectations in recent quarters and year," he said. The American economy has been pounded by a lot of factors, including the housing collapse (a needed correction to bring home prices down to earth), the mortgage scandal and the meteoric rise in oil and gas prices. But this $14 trillion economy, though slowing down, continues to grow by about 1 percent on an annualized basis, confounding the pessimists who said we were plunging into a recession, defined by negative growth over two quarters. That has not happened - yet. Call me a cockeyed optimist, but I do not think we are heading into a recession. On the contrary, I'm more bullish than ever on our economy's long-term prospects.

#### There in so such thing as the global economy—economic links are regional

**Fletcher 2010** – Adjunct Fellow at the San Francisco office of the U.S. Business and Industry Council (7/7, Ian, Huffington Post, “The myth of the global economy”, http://www.huffingtonpost.com/ian-fletcher/the-myth-of-the-global-ec\_b\_638546.html, props to Mustafa for the cite, WEA)

If there's one thing everyone knows these days, whether they're happy about it or not, it's that we live in a "global" economy. This fact is taken as so obvious that anyone who disputes it is regarded as not so much wrong as simply ignorant -- not even worth arguing with. So it may come as a shock to many that, in reality, the cliche that we live in a borderless global economy does not survive serious examination. The key is to ignore the Thomas Friedmanesque rhetoric the media is flooded with and get down to some hard numbers. The easiest hard number is this: Because the U.S. is roughly 25 percent of the world economy, a truly borderless world would imply that imports and exports would each make up 75 percent of our economy, since our purchase and sale transactions would be distributed around the world. This would entail a total trade level (imports plus exports) of 150 percent of GDP. Instead, our total trade level is 29 percent: imports are 17 percent and exports 12 percent. So our economy is nowhere near borderless. Furthermore, as our trade is almost certainly destined to be balanced by import contraction, rather than an export boom, in the next few years, our trade level is almost certainly poised to go down, not up. So unless the U.S. can somehow magically find a way to keep sucking in $300 to $700 billion a year in imports it doesn't pay for with exports, America in a few years will be importing significantly less and will be a less globalized economy. A truly unified world economy would also mean that rates of interest and profit would have to be equal everywhere--because if they weren't, the differences would be arbitraged away by the financial markets. But this is nowhere near being the case: Interest rates and corporate profits vary widely around the world. Economists James Anderson and Eric van Wincoop have calculated that the average cost of international trade (ignoring tariffs) is the equivalent of a 170 percent tariff. Even between adjacent and similar nations like the U.S. and Canada, national borders still count: Canadian economist John McCallum has documented that trade between Canadian provinces is on average 20 times as large as the corresponding trade between Canadian provinces and American states. And much of international trade is interregional anyway, not global, being centered on European, North American, and East Asian blocs; this is true for just under 50 percent of both agriculture and manufactured goods. In reality, the world economy remains what it has been for a very long time: a thin crust of genuinely global economy (more visible than its true size due to its concentration in media, finance, technology, and luxury goods) over a network of regionally-linked national economies, over vast sectors of every economy that are not internationally traded at all (70 percent of the U.S. economy, for example). On present trends, it will remain roughly this way for the rest of our lives. The world economy in the early 21st century is not even remotely borderless. Another stubborn reality is that, contrary to what some people seem to think, the nation-state is a long way from being economically irrelevant. Most fundamentally, it remains relevant to people because most people still live in the nation where they were born, which means that their economic fortunes depend upon wage and consumption levels within that one society. Unemployed Americans are learning this the hard way right now. Capital is a similar story. Even in the early 21st century, it hasn't been globalized nearly as much as often imagined. And it also cares very much about where it lives, frequently for the same reasons people do. (Few people wish to live or invest in Zimbabwe; many people wish to live and invest in California.) For a start, because 70 percent of America's capital is human capital, a lot of capital behaves exactly as people do, simply because it is people. Another 12 percent has been estimated by the World Bank to be social capital, the value of institutions and knowledge not assignable to individuals. So although liquid financial capital can indeed flash around the world in the blink of an electronic eye, this is only a fraction (under 10 percent) of any developed nation's capital stock. Even most nonhuman capital resides in things like real estate, infrastructure, physical plant, and types of financial capital that don't flow overseas -- or don't flow very much. (Economists call this "don't flow very much" phenomenon home bias, and it is well documented.) As a result, the output produced by all this capital is still largely tied to particular nations. So although capital mobility certainly causes big problems of its own, it is nowhere near big enough to literally abolish the nation-state as an economic unit. Will it do so one day? Even this is unlikely. Even where famously dematerializing and globalizing assets, like fiber optic telecom lines, are added -- assets that supposedly make physical location irrelevant--they are still largely being added where existing agglomerations of capital are. For example, although fiber optic backbones have gone into places like Bangalore, India, which were not global economic centers a generation ago, big increments of capacity have also gone into places like Manhattan, Tokyo, Silicon Valley, and Hong Kong, which were already important. As a result, existing geographic agglomerations of capital are largely self-reinforcing and here to stay, even if new ones come into being in unexpected places (often through decisions made by national governments). And these agglomerations have national shape because of past history; legacy effects can be extremely durable. Previous technological revolutions, such as the worldwide spread of railroads, were at least as big as current innovations like the Internet, and they didn't abolish the nation-state. Ironically, the enduring relevance of the national economy is clearest in some of the "poster child" countries of globalization, like Japan, Taiwan, South Korea, Singapore, and Ireland. In each of these nations, economic success was the product of policies enacted by governments that were in some sense nationalist. Japan industrialized after the Meiji Restoration of 1868 to avoid being colonized by some Western power. Taiwan did it out of fear of mainland China. South Korea did it out of fear of North Korea. Ireland did it to escape economic domination by England. In each case, the driving force was not simply desire for profit. This exists in every society (including resource-rich basket cases like Nigeria, where it merely produces gangsterism), but does not reliably crystallize into the policies needed for economic growth. The driving force was national political needs that found a solution in economic development.

### A2 States

#### 50 state fiat is a voting issue – no decision makers controls state policy, kills logic which justifies infinite intrinsicness – no solvency advocate kills fairness and undermines core research skills – kills real world education

#### Perm do both – state action provides cover and acts like a mandate for Obama

#### Counterplan makes investors uncertain

#### A. Skin in the game – investors want to see federal government support for tech, so they’re convinced they won’t impose licensing restrictions – that’s Adams

#### B. Full faith and credit

**Sullivan and Walsh, 8 -** Mary Anne Sullivan, partner in Hogan & Hartson's energy practice, has more than 25 years of experience as an energy lawyer. She previously served as general counsel of the U.S. Department of Energy and as deputy general counsel for environment and nuclear programs. Sam Walsh is an associate at Hogan & Hartson (“Federal Loan Guarantees,” Electric Light and Power, Mar/April, ABI Inform)

In their rulemaking comments, Wall Street firms emphasized that a loan guarantee must represent the unconditional commitment of the full faith and credit of the United States if the program is to succeed in attracting affordable private investment to innovative technologies. The final rule seems to have calmed concerns that the guarantees might be conditioned in a way that would preclude the "AAA" rating for the federally guaranteed debt that the program was designed to assure. The guarantees will be absolute, absent fraud or material misrepresentation by the holder of a guaranteed obligation.

#### Certainty is essential – only effective method of catalyzing investment

**Whitefield, 11** [5/4/11, STATEMENT OF THE HONORABLE ED WHITFIELD CHAIRMAN, SUBCOMMITTEE ON ENERGY AND POWER, “The Role of the Nuclear Regulatory Commission in America’s Energy Future, http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/050411/Whitfield.pdf

While the NRC may not be the direct cause of this uncertainty – the Obama Administration’s policy is - the NRC’s actions will contribute to the uncertainty one way or another. Beyond open adjudicatory issues, the NRC has recently taken administrative action to close down its review of Yucca Mountain, which will deprive the public of the first independent government assessment of the merits of Yucca Mountain’s construction. That doesn’t bode well for a nuclear renaissance. On the front end of nuclear power development, I’m very interested to hear about whether the NRC can develop and provide more regulatory certainty in its licensing and re-licensing programs. As in other energy sectors, regulatory certainty, such as keeping to decision schedules, is essential for ensuring the investments necessary to develop nuclear energy. Additionally, I think it is worth reviewing the Commission’s organizational structure, and whether an agency rightly focused on safety is suitably structured to also facilitate the advancement of new nuclear generation. And connected with regulatory certainty, are clear and well developed safety engineering evaluations. As mentioned, the safety record of NRC is unparalleled. But recent events in Japan have raised questions in the public’s mind about how well the NRC does its job. We need to be confident the NRC is up to the task. I believe the agency is, but scrutiny is helpful to maintain the public trust. We do not want to overreact to events based on poor and faulty information or other political agendas. Nuclear power is critical to this nation. We should recognize its importance for a growing economy and not lose sight of the tremendous value a reliable, affordable power supply will mean for the future health and wealth of the United States.

#### Can’t solve nuclear leadership – not perceived

Fertel, 05 - Senior Vice President And Chief Nuclear Officer Nuclear Energy Institute (Marvin, CQ Congressional Testimony, “NUCLEAR POWER'S PLACE IN A NATIONAL ENERGY POLICY,” 4/28, lexis) //DH

Industry and government will be prepared to meet the demand for new emission-free baseload nuclear plants in the 2010 to 2020 time frame only through a sustained focus on the necessary programs and policies between now and then. As it has in the past, strong Congressional oversight will be necessary to ensure effective and efficient implementation of the federal government's nuclear energy programs, and to maintain America's leadership in nuclear technology development and its influence over important diplomatic initiatives like nonproliferation. Such efforts have provided a dramatic contribution to global security, as evidenced by the U.S.-Russian nonproliferation agreement to recycle weapons-grade material from Russia for use in American reactors. Currently, more than 50 percent of U.S. nuclear power plant fuel depends on converted Russian warhead material. Nowhere is continued congressional oversight more important than with DOE's program to manage the used nuclear fuel from our nuclear power plants. Continued progress toward a federal used nuclear fuel repository is necessary to support nuclear energy's vital role in a comprehensive national energy policy and to support the remediation of DOE defense sites. Since enactment of the 1982 Nuclear Waste Policy Act, DOE's federal repository program has repeatedly overcome challenges, and challenges remain before the Yucca Mountain facility can begin operation. But as we address these issues, it is important to keep the overall progress of the program in context. There is international scientific consensus that a deep geologic repository is the best solution for long-term disposition of used military and commercial nuclear power plant fuel and high-level radioactive byproducts. The Bush administration and Congress, with bipartisan support, affirmed the suitability of Yucca Mountain for a repository in 2002. Over the past three years, the Energy Department and its contractors have made considerable progress providing yet greater confirmation that this is the correct course of action and that Yucca Mountain is an appropriate site for a national repository. --During the past year, federal courts have rejected significant legal challenges by the state of Nevada and others to the Nuclear Waste Policy Act and the 2002 Yucca Mountain site suitability determination. These challenges questioned the constitutionality of the Yucca Mountain Development Act and DOE's repository system, which incorporates both natural and engineered barriers to contain radioactive material safely. In the coming year, Congress will play an essential role in keeping this program on schedule, by taking the steps necessary to provide increased funding for the project in fiscal 2006 and in future years. Meeting DOE's schedule for initial repository operation requires certainty in funding for the program. This is particularly critical in view of projected annual expenditures that will exceed $1 billion beginning in fiscal 2007. Meeting these budget requirements calls for a change in how Congress provides funds to the project from monies collected for the Nuclear Waste Fund. The history of Yucca Mountain funding is evidence that the current funding approach must be modified. Consumer fees (including interest) committed to the Nuclear Waste Fund since its f6rmation in 1983 total more than $24 billion. Consumers are projected to pay between $750 million to $800 million to the fund each year, based on electricity generated at the nation's 103 reactors. This is more than $2 million per day. Although about $8 billion has been used for the program, the balance in the fund is nearly $17 billion. In each of the past several years, there has been a gap between the annual fees paid by consumers of electricity from nuclear power plants and disbursements from the fund for use by DOE at Yucca Mountain. Since the fund was first established, billions of dollars paid by consumers of electricity from nuclear power plants to the Nuclear Waste Fund-intended solely for the federal government's used fuel program-in effect have been used to decrease budget deficits or increase surpluses. The industry believes that Congress should change the funding mechanism for Yucca Mountain so that payments to the Nuclear Waste Fund can be used only for the project and be excluded from traditional congressional budget caps. Although the program should remain subject to congressional oversight, Yucca Mountain appropriations should not compete each year for funding with unrelated programs when Congress directed a dedicated funding stream for the project.¶ The industry also believes that it is appropriate and necessary to consider an alternative perspective on the Yucca Mountain project. This alternative would include an extended period for monitoring operation of the repository for up to 300 years after spent fuel is first placed underground. The industry believes that this approach would provide ongoing assurance and greater confidence that the repository is performing as designed, that public safety is assured, and that the environment is protected. It would also permit DOE to apply evolving innovative technologies at the repository. Through this approach, a scientific monitoring program would identify additional scientific information that can be used in repository performance models. The project then could update the models, and make modifications in design and operations as appropriate.¶ Congressional committees like this one can help ensure that DOE does not lose sight of its responsibility for used nuclear fuel management and disposal, as stated by Congress in the Nuclear Waste Policy Act of 1982. The industry fully supports the fundamental need for a repository so that used nuclear fuel and the byproducts of the nation's nuclear weapons program are securely managed in an underground, specially designed facility. World-class science has demonstrated that Yucca Mountain is the best site for that facility. A public works project of this magnitude will inevitably face challenges. Yet, none is insurmountable. DOE and its contractors have made significant progress on the project and will continue to do so as the project enters the licensing phase. Congressional oversight also can play a key role in maintaining and encouraging the stability of the NRC's regulatory process. Such stability is essential for our 103 operating nuclear plants and equally critical in licensing new nuclear power plants. Congress played a key role several years ago in encouraging the NRC to move toward a new oversight process for the nation's nuclear plants, based on quantitative performance indicators and safety significance. Today's reactor oversight process is designed to focus industry and NRC resources on equipment, components and operational issues that have the greatest importance to, and impact on, safety. The NRC and the industry have worked hard to identify and implement realistic security requirements at nuclear power plants. In the three-and-a-half years since 9/11, the NRC has issued a series of requirements to increase security and enhance training for security programs. The industry complied-fully and rapidly.¶ In the days and months following Sept. 11, quick action was required. Orders that implemented needed changes quickly were necessary. Now, we should return to the orderly process of regulating through regulations.¶ The industry has spent more than $1 billion enhancing security since September 2001. We've identified and fixed vulnerabilities. Today, the industry is at the practical limit of what private industry can do to secure our facilities against the terrorist threat. NRC Chairman Nils Diaz and other commissioners have said that the industry has achieved just about everything that can be reasonably achieved by a civilian force.¶ The industry now needs a transition period to stabilize the new security requirements. We need time to incorporate these dramatic changes into our operations and emergency planning programs and to train our employees to the high standards of our industry-and to the appropriately high expectations of the NRC.¶ Both industry and the NRC need congressional oversight to support and encourage this kind of stability.¶ CONCLUSION¶ Electricity generated by America's nuclear power plants over the past half-century has played a key part in our nation's growth and prosperity. Nuclear power produces over 20 percent of the electricity used in the United States today without producing air pollution. As our energy demands continue to grow in years to come, nuclear power should play an even greater role in meeting our energy and environmental needs.¶ The nuclear energy industry is operating its reactors safely and efficiently. The industry is striving to produce more electricity from existing plants. The industry is also developing more efficient, next-generation reactors and exploring ways to build them more cost-effectively.¶ The public sector, including the oversight committees of the U.S. Congress, can help maintain the conditions that ensure Americans will continue to reap the benefits of our operating plants, and create the conditions that will spur investment in America's energy infrastructure, including new nuclear power plants.¶ One important step is passage of comprehensive energy legislation that recognizes nuclear energy's contributions to meeting our growing energy demands, ensuring our nation's energy security and protecting our environment. Equally important, however, is the need to ensure effective and efficient implementation of existing laws, like the Nuclear Waste Policy Act, and to provide federal agencies with the resources and oversight necessary to discharge their statutory responsibilities in the most efficient way possible. The commercial nuclear power sector was born in the United States, and nations around the world continue to look to this nation for leadership in this technology and in the issues associated with nuclear power. Our ability to influence critical international policies in areas like nuclear nonproliferation, for example, depends on our ability to maintain a leadership role in prudent deployment, use and regulation of nuclear energy technologies here at home, in the United States, and on our ability to manage the technological and policy challenges-like waste management-that arise with all advanced technologies.

#### Doesn’t solve the case – restrictions are codified in federal law – prevents the **requisite licensing**, means the cp fails to cause commercialization – that’s 1ac Martin AND

MIT, 10 [Massachusetts Institute of Technology, “Nuclear Energy Research and Development Roadmap: Report to Congress”, April 2010, http://ocw.mit.edu/courses/nuclear-engineering/22-033-nuclear-systems-design-project-fall-2011/readings/MIT22\_033F11\_read\_core\_doe.pdf]

In the United States, it is the responsibility of industry to design, construct, and operate commercial nuclear power plants. However, DOE has statutory authority under the Atomic Energy Act to promote and support nuclear energy technologies for commercial applications. In general, appropriate government roles include researching high-potential technologies beyond the investment horizon of industry and also reducing the technical risks of new technologies. In the case of new commercial reactor designs, potential areas of NE involvement could include: Enabling new technologies to be inserted into emerging and future designs by providing access to unique laboratory resources for new technology development and, where appropriate, demonstration. • Working through the laboratories and universities to provide unique expertise and facilities to industry for R&D in the areas of: o Innovative concepts and advanced technologies. o Fundamental phenomena and performance data. o Advanced modeling and simulation capabilities. APRIL 2010 22 34 NUCLEAR ENERGY RESEARCH AND DEVELOPMENT ROADMAP o New technology testing and, if appropriate, demonstration. o Advanced manufacturing methods. Representative R&D activities that support each of the roles stated above are presented below. The level of DOE investment relative to industry investment will vary across the spectrum of these activities, with a generally increasing trend in DOE investment for longer-term activities. Finally, there is potential to leverage and amplify effective U.S. R&D through collaborations with other nations through multilateral and bilateral agreements including the Generation IV International Forum, which is investigating multiple advanced reactor concepts. DOE is also a participant in OECD/NEA and IAEA initiatives that bear directly on the development and deployment of new reactor systems.

### A2 Security

#### Framework – the k needs to prove the whole plan is bad– any other interp moots aff offense and decreases policy education

#### Epistemological debate is irrelevant - concrete action is inevitable - they fail to create useful knowledge

**Friedrichs, 09** [Jorg, University Lecturer in Politics at the Oxford Department of International Development, “From Positivist Pretense to Pragmatic Practice Varieties of Pragmatic Methodology in IR Scholarship” Pragmatism and International Relations]

As Friedrich Nietzsche ([1887] 1994:1; cf. Wilson 2002) knew, the knower isstrangely unknown to himself. In fact, it is much morehazardous to contemplate theway how we gain knowledge than to gain such knowledge in the ﬁrst place. This is not to deny that intellectuals are a narcissistic Kratochwil lot, with a penchant for omphaloskepsis. The typical result of their navel-gazing, however, is not increased self-awareness. Scholars are more likely to come up with ex-post-facto rationalizations of how they would like to see their activity than with accurate descriptions of how they go about business. As a result, in science there is a paradoxical divide between positivist pretenseand pragmatic practice. Many prominent scholars proceed pragmatically in gen-erating their knowledge, only to vest it all in a positivist cloak when it comes topresenting results. In the wake of Karl Popper (1963), fantasies about ingeniousconjectures and inexorable refutations continue to hold sway despite the muchmore prosaic way most scholars grope around in the formulation of their theo-ries, and the much less rigorous way they assess the value of their hypotheses. In proposing pragmatism as a more realistic alternative to positivist idealiza-tions, I am not concerned with the original intentions of Charles Peirce. Theseare discussed and enhanced by Ryto¨ vuori-Apunen (this forum). Instead, Ipresent various attempts to make pragmatism work as a methodology for IR scholarship. This includes my own preferred methodology, the pragmaticresearch strategy of abduction. As Fritz Kratochwil and I argue elsewhere, abduction should be at the center of our efforts, while deduction and induction areimportant but auxiliary tools (Friedrichs and 2009).Of course, one does not need to be a pragmatist to proceed in a pragmatic way. Precisely because it is derived from practice, pragmatic commonsense is a sold as the hills. For example, James Rosenau (1988:164) declared many yearsago that he coveted ‘‘a long-held conviction that one advances knowledge most effectively by continuously moving back and forth between very abstract and very empirical levels of inquiry, allowing the insights of the former to exert pressurefor the latter even as the ﬁndings of the latter, in turn, exert pressure for the for-mer, thus sustaining an endless cycle in which theory and research feed on eachother.’’ This was shortly before Rosenau’s turn to postmodernism, while he wasstill touting the virtues of behaviorism and standard scientiﬁc requisites, such asindependent and dependent variables and theory testing. But if we take his state-ment at face value, it appears that Rosenau-the-positivist was guided by a sort of pragmatism for all but the name. While such practical commonsense is certainly valuable, in and by itself, it does not qualify as scientiﬁc methodology. Science requires a higher degree of methodological awareness. For this reason, I am not interested here in pragma-tism as unspoken commonsense, or as a pretext for doing empirical researchunencumbered by theoretical and methodological considerations. Nor am I con-cerned with pragmatism as an excuse for staging yet another epistemological debate. Instead, I am interested in pragmatism as an instrument to go about research with an appropriate degree of epistemological and methodologicalawareness. Taking this criterion as my yardstick, the following three varieties of pragmatist methodology in recent IR scholarship are worth mentioning: theory synthesis, analytic eclecticism (AE), and abduction.Theory synthesis is proposed by Andrew Moravcsik (2003), who claims that theories can be combined as long as they are compatible at some unspeciﬁedfundamental level, and that data will help to identify the right combination of theories. He does not explicitly invoke pragmatism but vests his pleading in apositivist cloak by using the language of theory testing. When looking closer,however, it becomes apparent that his theoretical and methodological noncha-lance is far more pragmatic than what his positivist rhetoric suggests. Moravcsiksees himself in good company, dropping the following names: Robert Keohane,Stephen Walt, Jack Snyder, Stephen Van Evera, Bary Buzan, Bruce Russett, John O’Neal, Martha Finnemore, and Kathryn Sikkink. With the partial excep-tion of Finnemore, however, none of these scholars explicitly links his or herscholarship to pragmatism. They employ pragmatic commonsense in theirresearch, but devoutly ignore pragmatism as a philosophical and methodologicalposition. As a result, it is fair to say that theory synthesis is only on a slightly higher level of intellectual awareness than Rosenau’s statement quoted above. Analytic eclecticism, as advertized by Peter Katzenstein and Rudra Sil, links acommonsensical approach to empirical research with a more explicit commit-ment to pragmatism (Sil and Katzenstein 2005; Katzenstein and Sil 2008).The 7 Even the dean of critical rationalism, Karl Popper, is ‘‘guilty’’ of lapses into pragmatism, for example when hestates that scientists, like hungry animals, classify objects according to needs and interests, although with the impor-tant difference that they are guided in their quest for ﬁnding regularities not so much by the stomach but ratherby empirical problems and epistemic interests (Popper 1963:61–62). 646 Pragmatism and International Relations idea is to combine existing research traditions in a pragmatic fashion and thusto enable the formulation and exploration of novel and more complex sets of problems. The constituent elements of different research traditions are trans-lated into mutually compatible vocabularies and then recombined in novel ways.This implies that most scholars must continue the laborious process of formulat-ing parochial research traditions so that a few cosmopolitan colleagues will beenabled to draw upon their work and construct syncretistic collages. 8 In additionto themselves, Katzenstein and Sil cite a number of like-minded scholars such asCharles Tilly, Sidney Tarrow, Paul Pierson, and Robert Jervis. 9 The ascription isprobably correct given the highly analytical and eclectic approach of these schol-ars. Nevertheless, apart from Katzenstein and Sil themselves none of these schol-ars has explicitly avowed himself to AE.My preferred research strategy is abduction, which is epistemologically asself-aware as AE but minimizes the dependence on existing research traditions.The typical situation for abduction is when we, both in everyday life and as socialscientists, become aware of a certain class of phenomena that interests us for somereason, but for which we lack applicable theories. We simply trust, although we donot know for certain, that the observed class of phenomena is not random. Wetherefore start collecting pertinent observations and, at the same time, applyingconcepts from existing ﬁelds of our knowledge. Instead of trying to impose anabstract theoretical template (deduction) or ‘‘simply’’ inferring propositions fromfacts (induction), we start reasoning at an intermediate level (abduction). Abduction follows the predicament that science is, or should be, above all amore conscious and systematic version of the way by which humans have learnedto solve problems and generate knowledge in their everyday lives. As it iscurrently practiced, science is often a poor emulator of what we are able toachieve in practice. This is unfortunate because human practice is the ultimatemiracle. In our own practice, most of us manage to deal with many challenging situations. The way we accomplish this is completely different from**,** and far moreefﬁcient than, the way knowledge is generated according to standard scientiﬁc methods. If it is true that in our own practice we proceed not so much by induction or deduction but rather by abduction, then science would do well tomimic this at least in some respects. 10 Abduction has been invoked by numerous scholars, including Alexander Wendt, John Ruggie, Jeffrey Checkel, Martin Shapiro, Alec Stone Sweet, andMartha Finnemore. While they all use the term abduction, none has ever thor-oughly speciﬁed its meaning. To make up for this omission, I have developedabduction into an explicit methodology and applied it in my own research oninternational police cooperation (Friedrichs 2008). Unfortunately, it is impossi-ble to go into further detail here. Readers interested in abduction as a way toadvance international research and methodology can also be referred to my recent article with Fritz Kratochwil (Friedrichs and Kratochwil 2009).On a ﬁnal note, we should be careful not to erect pragmatism as the ultimateepistemological fantasy to caress the vanity of Nietzschean knowers unknown tothemselves, namely that they are ingeniously ‘‘sorting out’’ problematic situa-tions. Scientiﬁc inquiry is not simply an intimate encounter between a researchproblem and a problem solver. It is a social activity taking place in communitiesof practice (Wenger 1998). Pragmatism must be neither reduced to the utility of results regardless of their social presuppositions and meaning, nor to the 8 Pace Rudra Sil (this forum), the whole point about eclecticism is that you rely on existing traditions to blendthem into something new. There is no eclecticism without something to be eclectic about. 9 One may further expand the list by including the international society approach of the English school (Ma-kinda 2000), as well as the early Kenneth Waltz (1959). 10 Precisely for this reason, abduction understood as ‘Inference to the Best Explanation’ plays a crucial role inthe ﬁeld of Artiﬁcial Intelligence. 647 The Forum fabrication of consensus among scientists. Pragmatism as the practice of dis-cursive communities and pragmatism as a device for the generation of useful knowledge are two sides of the same coin

#### Realism is true and inevitable – trying to shift away causes great power war

**Mearsheimer 1** [professor of political science at University of Chicago, The Tragedy of Great Power Politics, pg. 361]

The optimists' claim that security competition and war among the great powers has been burned out of the system is wrong. In fact, all of the major states around the globe still care deeply about the balance of power and are destined to compete for power among themselves for the foreseeable future. Consequently, realism will offer the most powerful explanations of international politics over the next century, and this will be true **even if the debates among academic** and policy **elites are dominated by non-realist theories**. In short, the real world remains a realist world. States still fear each other and seek to gain power at each other's expense, because international anarchy-the driving force behind greatpower behavior-did not change with the end of the Cold War, and there are few signs that such change is likely any time soon. States remain the principal actors in world politics and there is still no night watchman standing above them. For sure, the collapse of the Soviet Union caused a major shift in the global distribution of power. But it did not give rise to a change in the anarchic structure of the system, and without that kind of profound change, there is no reason to expect the great powers to behave much differently in the new century than they did in previous centuries.Indeed, considerable evidence from the 1990s indicates that power politics has not disappeared from Europe and Northeast Asia, the regions in which there are two or more great powers, as well as possible great powers such as Germany and Japan. There is no question, however, that the competition for power over the past decade has been low-key. Still, there is potential for intense security competion among the great powers that might lead to a major war. Probably the best evidence of that possibility is the fact that the United States maintains about one hundred thousand troops each in Europe and in Northeast Asia for the explicit purpose of keeping the major states in each region at peace.

#### Rejection of securitization causes the state to become more interventionist—turns the K

Tara **McCormack, ’10**, is Lecturer in International Politics at the University of Leicester and has a PhD in International Relations from the University of Westminster. 2010, (Critique, Security and Power: The political limits to emancipatory approaches, page 127-129)

The following section will briefly raise some questions about the rejection of the old security framework as it has been taken up by the most powerful institutions and states. Here we can begin to see the political limits to critical and emancipatory frameworks. In an international system which is marked by great power inequalities between states, the rejection of the old narrow national interest-based security framework by major international institutions, and the adoption of ostensibly emancipatory policies and policy rhetoric, has the consequence of **problematising weak or unstable states** and allowing international institutions or major states a more interventionary role, yet without establishing mechanisms by which the citizens of states being intervened in might have any control over the agents or agencies of their emancipation. Whatever the problems associated with the pluralist security framework **there were at least formal and clear demarcations**. This has the consequence of **entrenching international power inequalities** and allowing for a shift towards a hierarchical international order in which the citizens in weak or unstable states may arguably have even less freedom or power than before. Radical critics of contemporary security policies, such as human security and humanitarian intervention, argue that we see an assertion of Western power and the creation of liberal subjectivities in the developing world. For example, see Mark Duffield’s important and insightful contribution to the ongoing debates about contemporary international security and development. Duffield attempts to provide a coherent empirical engagement with, and theoretical explanation of, these shifts. Whilst these shifts, away from a focus on state security, and the so-called merging of security and development are often portrayed as positive and progressive shifts that have come about because of the end of the Cold War, Duffield argues convincingly that these shifts are highly problematic and unprogressive. For example, the rejection of sovereignty as formal international equality and a presumption of nonintervention has eroded the division between the international and domestic spheres and led to an international environment in which Western NGOs and powerful states have a major role in the governance of third world states. Whilst for supporters of humanitarian intervention this is a good development, Duffield points out the depoliticising implications, drawing on examples in Mozambique and Afghanistan. Duffield also draws out the problems of the retreat from modernisation that is represented by sustainable development. The Western world has moved away from the development policies of the Cold War, which aimed to develop third world states industrially. Duffield describes this in terms of a new division of human life into uninsured and insured life. Whilst we in the West are ‘insured’ – that is we no longer have to be entirely self-reliant, we have welfare systems, a modern division of labour and so on – sustainable development aims to teach populations in poor states how to survive in the absence of any of this. Third world populations must be taught to be self-reliant, they will remain uninsured. Self-reliance of course means **the condemnation of millions to** **a barbarous life of inhuman bare survival**. Ironically, although sustainable development is celebrated by many on the left today, by leaving people to fend for themselves rather than developing a society wide system which can support people, sustainable development actually leads to a less human and humane system than that developed in modern capitalist states. Duffield also describes how many of these problematic shifts are embodied in the contemporary concept of human security. For Duffield, we can understand these shifts in terms of Foucauldian biopolitical framework, which can be understood as a regulatory power that seeks to support life through intervening in the biological, social and economic processes that constitute a human population (2007: 16). Sustainable development and human security are for Duffield technologies of security which aim to *create* self-managing and self-reliant subjectivities in the third world, which can then survive in a situation of serious underdevelopment (or being uninsured as Duffield terms it) without causing security problems for the developed world. For Duffield this is all driven by a neoliberal project which seeks to control and manage uninsured populations globally. Radical critic Costas Douzinas (2007) also criticises new forms of cosmopolitanism such as human rights and interventions for human rights as a triumph of American hegemony. Whilst we are in agreement with critics such as Douzinas and Duffield that these new security frameworks cannot be empowering, and ultimately lead to more power for powerful sta**tes**, we need to understand why these frameworks have the effect that they do. We can understand that these frameworks have political limitations without having to look for a specific plan on the part of current powerful states. In new security frameworks such as human security we can see the political limits of the framework proposed by critical and emancipatory theoretical approaches.

#### Prolif threats real

**Harvey 01** (Frank P., a member of a the Canadian International Council, “National Missile Defence Revisited, Again a Reply to David Mutimer,” International Journal, Vol. 56, No. 2 (Spring, 2001), pp. 347-360, Canadian International Council)

**'Before any argument** supporting NMD **can be taken seriously**, there-fore, **we must accept that a "rogue** state **threat" exists'** (p 340). I couldn't agree more. But this is perhaps the most fascinating of all of Mutimer s assertions because he himself acknowledges the 'facts' of the rogue state threat - and I thought only proponents shared the burden of proving the case for NMD. Consider the following quotes: • The rogue state needs, therefore, to be seen for what it was: the creation of the United States military to justify its claim on resources ... The rogue state, however, is a myth. [It] is not mythical in the sense that it is not real, but rather in the sense that it has been vested with a totemic importance by the United States' (p 344) (emphasis added). • 'Rogues are the enemies that make high levels of military spending legitimate. They are not a lie told by knowing capitalists in an instrumental fashion to hoodwink Congress into passing over-inflated budgets (p 345, n 24) (emphasis added). I am not arguing that the United States fabricated evidence, but rather that it produced a particular frame within which to interpret that evidence' (p 345) (emphasis added). • 'The imagined nature of threats does not mean that there is no real danger or that nothing need ever be done about risks' (p 345). • 'The issue, therefore, is not the evidence but rather how the "facts" are "evidence" of a particular form of threat labelled "proliferation" by actors labelled "rogue"' (p 344, n22). • 'There is, therefore, no need for me to engage in a discussion of the evidence of proliferation assembled, for example, in the Rumsfeld Report to bolster the case for NMD. At issue are not "the facts" but the ways in which those facts are assembled and the interpretation that is given to them' (p 344, n 22). Mutimer s honesty is refreshing but not surprising. **Ballistic missile** proliferation is difficult to deny. **It is a 'real' security threat**, driven by technological progress, the spread of scientific knowledge related to these weapons systems, diminishing costs, ongoing regional security threats in the Middle East and Asia, and, most importantly, time.

## 1ar

### States 1AR

#### Only federal action solves – need skin in the game

**Gale et al. ‘9** (FINANCING THE NUCLEAR RENAISSANCE: THE BENEFITS AND POTENTIAL PITFALLS OF FEDERAL & STATE GOVERNMENT SUBSIDIES AND THE FUTURE OF NUCLEAR POWER IN CALIFORNIA Sony Ben-Moshe, Jason J. Crowell, Kelley M. Gale,\* Breton A. Peace, Brett P. Rosenblatt, and Kelly D. Thomason\*\* \* Kelley Michael Gale is the Finance Department Chair of Latham & Watkins‘ San Diego office and serves as global Co-Chair for the firm‘s Climate Change and Cleantech Practice Groups. He has thirty years of experience representing private and public sector clients in the development, regulation, and financing of alternative energy projects and capital intensive infrastructure projects. \*\* The co-authors are attorneys in the Project Finance Practice Group in the San Diego office of Latham & Watkins LLP. The views expressed in this article are those of the authors and do not reflect the views of Latham & Watkins LLP or its clients. 498 ENERGY LAW JOURNAL [Vol. 30:497 2009

Similar to this political risk, **investors in new domestic nuclear reactors will likely face substantial regulatory and permitting risks, such as the risk of litigation** by residents or environmentalists desiring to thwart any large scale development of new reactors in the United States **and** the risk that **a** largely **untested** **regulatory approval process** may not operate as anticipated, and **those** challenges **can result in significant delays** in construction of a nuclear power project. Although they are different in kind, the substance of sovereign and other risks facing large overseas infrastructure projects is similar in the sense that worst case scenarios of delay or inability to make commercial use of the projects and the magnitude of the potential losses are roughly equivalent. As a risk mitigation measure in the case of financings for natural gas liquefaction facilities and other large overseas infrastructure projects, the Export-Import Bank of the United States may approve loan guarantees and offer credit enhancements and/or direct loans to support the sale of United States exports to emerging markets throughout the world. Its loan guarantees to support the construction of large overseas infrastructure projects increase the comfort of private institutional investors because these investors believe there is a substantially lower risk that an overseas political regime will change the rules in a manner adverse to creditors if the United States government is one of those creditors.34 In a similar fashion, regulatory risk insurance and loan guarantees provided by **the federal government should encourage** private financing of domestic nuclear power projects **because the government** providing the guarantees **also** **controls many of the risk factors which could give rise to regulatory delays** in commencing commercial operation of a new nuclear project. Further, in the nuclear power industry, **the federal government is reviewing** development **applications and reactor designs**, and is equipped with a **team of experts** in nuclear technologies, so that **if the federal government has skin in the game,** so to speak, **private lenders may take** additional **comfort** that **the government has performed a** certain level of **due diligence** **on a particular project and determined that there are no major flaws from its vantage point**. Section II.D.3 below discusses the risks covered by federally provided regulatory risk insurance and the ways in which it can be adapted to best encourage private sector financing for nuclear energy.

#### States fail

Ben Moshe, et al 2011 [Kelley Michael Gale is the Finance Department Chair of Latham & Watkins‘ San Diego office and serves as global Co-Chair for the firm‘s Climate Change and Cleantech Practice Groups. He has thirty years of experience representing private and public sector clients in the development, regulation, and financing of alternative energy projects and capital intensive infrastructure projects. The co-authors are attorneys in the Project Finance Practice Group in the San Diego office of Latham & Watkins LLP. The views expressed in this article are those of the authors and do not reflect the views of Latham & Watkins LLP or its clients. FINANCING THE NUCLEAR RENAISSANCE: THE BENEFITS AND POTENTIAL PITFALLS OF FEDERAL & STATE GOVERNMENT SUBSIDIES AND THE FUTURE OF NUCLEAR POWER IN CALIFORNIA Sony Ben-Moshe, Jason J. Crowell, Kelley M. Gale,\* Breton A. Peace, Brett P. Rosenblatt, and Kelly D. Thomason\*\*, p. google]

A primary reason why the financing of a nuclear power project may resemble a Mega-Financing is the sheer magnitude of capital required to finance project construction.32 Absent proper government incentives, the required capital may not be obtainable at optimal pricing for reasons aside from the intercreditor issues noted above. Lending institutions often have caps on the amount of capital that can be exposed to both a particular project and a specific industry sector. In addition, regulatory and construction risks at any given project will limit any particular investor‘s desire to put too much money into any one project. As a practical reality, this desire to diversify against risk and the sheer magnitude of debt capital needed for any project may limit the amount of debt a project sponsor can raise in the commercial bank and capital markets. Government issued loan guarantees present one way to potentially decrease perceived risk and thereby increase the amount of money an investor is willing to put into a project and bring to the table investors who might otherwise not be interested (for example, certain institutional investors may only invest in instruments backed by the full faith and credit of the United States Government). To optimize nuclear development in the United States, the specifics of the government support programs should be adjusted in ways necessary to reach the point whereupon lending institutions can invest sufficient capital for nuclear construction as part of a well-balanced portfolio of assets. Specific adjustments that may help reach this point are discussed in Section II.D.2 below. Nuclear power project financing also may more closely resemble a Mega- Financing than a traditional project financing of a renewable power project due to the unusual risks presented by construction of a nuclear reactor. One of the key issues involved in many Mega-Financings (particularly cross-border financings) is political risk and uncertainty. Natural gas liquefaction projects, for example, often take place in less developed countries in South America and West Africa, where political risk factors abound, including currency conversion risk, sovereign risk and environmental issues presented by investing in the global market. ―No matter how detailed a contract, a new political regime could change the rules and the conditions under which you made your investment virtually overnight.‖33 Similar to this political risk, investors in new domestic nuclear reactors will likely face substantial regulatory and permitting risks, such as the risk of litigation by residents or environmentalists desiring to thwart any large scale development of new reactors in the United States and the risk that a largely untested regulatory approval process may not operate as anticipated, and those challenges can result in significant delays in construction of a nuclear power project. Although they are different in kind, the substance of sovereign and other risks facing large overseas infrastructure projects is similar in the sense that worst case scenarios of delay or inability to make commercial use of the projects and the magnitude of the potential losses are roughly equivalent. As a risk mitigation measure in the case of financings for natural gas liquefaction facilities and other large overseas infrastructure projects, the Export-Import Bank of the United States may approve loan guarantees and offer credit enhancements and/or direct loans to support the sale of United States exports to emerging markets throughout the world. 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Further, in the nuclear power industry, the federal government is reviewing development applications and reactor designs, and is equipped with a team of experts in nuclear technologies, so that if the federal government has skin in the game, so to speak, private lenders may take additional comfort that the government has performed a certain level of due diligence on a particular project and determined that there are no major flaws from its vantage point. Section II.D.3 below discusses the risks covered by federally provided regulatory risk insurance and the ways in which it can be adapted to best encourage private sector financing for nuclear energy. Against the backdrop of this larger structuring discussion, as we look at different public support and incentive programs designed to spur development, we must bear in mind that the efficacy of these programs will depend on whether and how well they work in the context of larger, more complicated financing structures.35 In fact, the very complexity of intercreditor relationships in different deal structures may run counter to the government‘s adopted goal of standardizing and streamlining the development and financing of new nuclear projects.36 As a practical matter, not only must the credit support programs work in the context of these complex financings, but the government may also have to be involved in the structuring of these financings, taking a seat at the table to customize each transaction.

### Sandy 1AR

#### nbd

**Morici 12** [How much damage could Sandy do to US economy?

By Peter Morici

Published October 29, 2012

FoxNews.com]

Hurricane Sandy will have a devastating impact on life and property. However, gauging its ultimate impact on an economy, one that is still struggling to overcome the Great Recession but has substantial resources to overcome adversity, is far more complex than merely adding up insurance payouts and uninsured losses.¶ Disasters can give the ailing construction sector a boost, and unleash smart reinvestment that actually improves stricken areas and the lives of those that survive intact. Ultimately, Americans, as they always seem to do, will emerge stronger in the wake of disaster and rebuild better—making a brighter future in the face of tragedy.¶ Sandy is unusual storm and complex to gauge. Coming late in the season and combining with cold fronts to the west and north, it is really a post-tropical cyclone and has the potential to deliver epic destruction. However, coming so soon after Irene in August 2011, the level of anticipation and preparedness demonstrated by federal and state officials is commendable and should mitigate some losses—especially loss of life.¶ Early estimates of the direct damage caused by Hurricane Irene were in the range of $7 billion but ultimately it inflicted $15 to 20 billion in damage.¶ It seems likely that Sandy will impose greater destruction of property, and add to that the loss of about two days commercial activity, spread over a week across 25 percent of the economy, an initial estimate of the economic losses imposed by Sandy is about $35 to 45 billion.¶ However, rebuilding after Sandy, especially in an economy with high unemployment and underused resources in the construction industry, will unleash at least $15-20 billion in new direct private spending--likely more as many folks rebuild larger than before, and the capital stock that emerges will prove more economically useful and productive.

#### IMF checks

**Business Week 2010** (7/19, IMF to Seek $250 Billion Boost to Lending Capacity, http://www.businessweek.com/news/2010-07-19/imf-to-seek-250-billion-boost-to-lending-capacity.html, WEA)

July 19 (Bloomberg) -- The International Monetary Fund is seeking a boost in its lending capacity to $1 trillion, from the current $750 billion, at a Group of 20 summit in South Korea in November, according to a Korean government official. The increase would help strengthen a global financial safety net to counter crises, the official said on condition of anonymity because the talks are private. South Korea is chair of the G-20 this year. IMF Managing Director Dominique Strauss-Kahn told the Financial Times that a boost to $1 trillion in IMF lending firepower was a “correct forecast.” Strauss-Kahn has sought to enhance the IMF’s role in serving as a buttress against financial crises, already overseeing a trebling in the fund’s war-chest to $750 billion since early 2009. While the IMF doesn’t foresee the global economy sinking back into a recession, the European debt crisis and elevated U.S. unemployment threaten to curtail the recovery. “They will have to increase the lending capacity over time to contain a crisis more effectively,” said Ham Joon-Ho, a professor of international economics and finance at Yonsei University in Seoul. Ham added that the IMF will also need to work to encourage members to line up contingency financing with the fund, which most have steered clear of given concern such a step would carry the “stigma” of signaling financial trouble.

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)
4. [↑](#footnote-ref-4)
5. [↑](#footnote-ref-5)
6. [↑](#footnote-ref-6)