## 1AC

### Contention One is Warming

#### The best science proves it’s anthropogenic

Muller, 2012 [Richard, professor of physics at the University of California, Berkeley, and a former MacArthur Foundation fellow, “The Conversion of a Climate-Change Skeptic”, http://www.nytimes.com/2012/07/30/opinion/the-conversion-of-a-climate-change-skeptic.html?pagewanted=all]

CALL me a converted skeptic. Three years ago I identified problems in previous climate studies that, in my mind, threw doubt on the very existence of global warming. Last year, following an intensive research effort involving a dozen scientists, I concluded that global warming was real and that the prior estimates of the rate of warming were correct. I’m now going a step further: Humans are almost entirely the cause. My total turnaround, in such a short time, is the result of careful and objective analysis by the Berkeley Earth Surface Temperature project, which I founded with my daughter Elizabeth. Our results show that the average temperature of the earth’s land has risen by two and a half degrees Fahrenheit over the past 250 years, including an increase of one and a half degrees over the most recent 50 years. Moreover, it appears likely that essentially all of this increase results from the human emission of greenhouse gases. These findings are stronger than those of the Intergovernmental Panel on Climate Change [IPCC], the United Nations group that defines the scientific and diplomatic consensus on global warming. In its 2007 report, the I.P.C.C. concluded only that most of the warming of the prior 50 years could be attributed to humans. It was possible, according to the I.P.C.C. consensus statement, that the warming before 1956 could be because of changes in solar activity, and that even a substantial part of the more recent warming could be natural. Our Berkeley Earth approach used sophisticated statistical methods developed largely by our lead scientist, Robert Rohde, which allowed us to determine earth land temperature much further back in time. We carefully studied issues raised by skeptics: biases from urban heating (we duplicated our results using rural data alone), from data selection (prior groups selected fewer than 20 percent of the available temperature stations; we used virtually 100 percent), from poor station quality (we separately analyzed good stations and poor ones) and from human intervention and data adjustment (our work is completely automated and hands-off). In our papers we demonstrate that none of these potentially troublesome effects unduly biased our conclusions. The historic temperature pattern we observed has abrupt dips that match the emissions of known explosive volcanic eruptions; the particulates from such events reflect sunlight, make for beautiful sunsets and cool the earth’s surface for a few years. There are small, rapid variations attributable to El Niño and other ocean currents such as the Gulf Stream; because of such oscillations, the “flattening” of the recent temperature rise that some people claim is not, in our view, statistically significant. What has caused the gradual but systematic rise of two and a half degrees? We tried fitting the shape to simple math functions (exponentials, polynomials), to solar activity and even to rising functions like world population. By far the best match was to the record of atmospheric carbon dioxide (CO2), measured from atmospheric samples and air trapped in polar ice.

#### Fossil fuels are key

Vertessy and Clark3-13**-**2012[Rob, Acting Director of Australian Bureau of Meteorology, and Megan, Chief Executive Officer at the Commonwealth Scientific and Industrial Research Organisation, “State of the Climate 2012”, <http://theconversation.edu.au/state-of-the-climate-2012-5831>]

Carbon dioxide (CO2) emissions account for about 60% of the effect from anthropogenic greenhouse gases on the earth’s energy balance over the past 250 years. These global CO2 emissions are mostly from fossil fuels (more than 85%), land use change, mainly associated with tropical deforestation (less than 10%), and cement production and other industrial processes (about 4%). Australia contributes about 1.3% of the global CO2 emissions. Energy generation continues to climb and is dominated by fossil fuels – suggesting emissions will grow for some time yet. CO2 levels are rising in the atmosphere and ocean. About 50% of the amount of CO2 emitted from fossil fuels, industry, and changes in land-use, stays in the atmosphere. The remainder is taken up by the ocean and land vegetation, in roughly equal parts. The extra carbon dioxide absorbed by the oceans is estimated to have caused about a 30% increase in the level of ocean acidity since pre-industrial times. The sources of the CO2 increase in the atmosphere can be identified from studies of the isotopic composition of atmospheric CO2 and from oxygen (O2) concentration trends in the atmosphere. The observed trends in the isotopic (13C, 14C) composition of CO2 in the atmosphere and the decrease in the concentration of atmospheric O2 confirm that the dominant cause of the observed CO2 increase is the combustion of fossil fuels.

#### 4 degree warming is inevitable with current carbon usage trends – emissions must be reduced

Potsdam Institute, 2012 (Potsdam Institute for Climate Impact Research and Climate Analytics, “Turn Down the Heat: Why a 4°C Warmer World Must be Avoided”, A report for the World Bank, November, http://climatechange.worldbank.org/sites/default/files/Turn\_Down\_the\_heat\_Why\_a\_4\_degree\_centrigrade\_warmer\_world\_must\_be\_avoided.pdf)

The emission pledges made at the climate conventions in Copenhagen and Cancun, if fully met, place the world on a trajectory for a global mean warming of well over 3°C. Even if these pledges are fully implemented there is still about a 20 percent chance of exceeding 4°C in 2100.10 If these pledges are not met then there is a much higher likelihood—more than 40 percent—of warming exceeding 4°C by 2100, and a 10 percent possibility of this occurring already by the 2070s, assuming emissions follow the medium business-as-usual reference pathway. On a higher fossil fuel intensive business-as-usual pathway, such as the IPCC SRESA1FI, warming exceeds 4°C earlier in the 21st century. It is important to note, however, that such a level of warming can still be avoided. There are technically and economically feasible emission pathways that could still limit warming to 2°C or below in the 21st century. To illustrate a possible pathway to warming of 4°C or more, Figure 22 uses the highest SRES scenario, SRESA1FI, and compares it to other, lower scenarios. SRESA1FI is a fossil-fuel intensive, high economic growth scenario that would very likely cause mean the global temperature to exceed a 4°C increase above preindustrial temperatures. Most striking in Figure 22 is the large gap between the projections by 2100 of current emissions reduction pledges and the (lower) emissions scenarios needed to limit warming to 1.5–2°C above pre-industrial levels. This large range in the climate change implications of the emission scenarios by 2100 is important in its own right, but it also sets the stage for an even wider divergence in the changes that would follow over the subsequent centuries, given the long response times of the climate system, including the carbon cycle and climate system components that contribute to sea-level rise. The scenarios presented in Figure 22 indicate the likely onset time for warming of 4°C or more. It can be seen that most of the scenarios remain fairly close together for the next few decades of the 21st century. By the 2050s, however, there are substantial differences among the changes in temperature projected for the different scenarios. In the highest scenario shown here (SRES A1FI), the median estimate (50 percent chance) of warming reaches 4°C by the 2080s, with a smaller probability of 10 percent of exceeding this level by the 2060s. Others have reached similar conclusions (Betts et al. 2011). Thus, even if the policy pledges from climate convention in Copenhagen and Cancun are fully implemented, there is still a chance of exceeding 4°C in 2100. If the pledges are not met and present carbon intensity trends continue, then the higher emissions scenarios shown in Figure 22 become more likely, raising the probability of reaching 4°C global mean warming by the last quarter of this century. Figure 23 shows a probabilistic picture of the regional patterns of change in temperature and precipitation for the lowest and highest RCP scenarios for the AR4 generation of AOGCMS. Patterns are broadly consistent between high and low scenarios. The high latitudes tend to warm substantially more than the global mean. RCP8.5, the highest of the new IPCC AR5 RCP scenarios, can be used to explore the regional implications of a 4°C or warmer world. For this report, results for RCP8.5 (Moss et al. 2010) from the new IPCC AR5 CMIP5 (Coupled Model Intercomparison Project; Taylor, Stouffer, & Meehl 2012) climate projections have been analyzed. Figure 24 shows the full range of increase of global mean temperature over the 21st century, relative to the 1980–2000 period from 24 models driven by the RCP8.5 scenario, with those eight models highlighted that produce a mean warming of 4–5°C above preindustrial temperatures averaged over the period 2080–2100. In terms of regional changes, the models agree that the most pronounced warming (between 4°C and 10°C) is likely to occur over land. During the boreal winter, a strong “arctic amplification” effect is projected, resulting in temperature anomalies of over 10°C in the Arctic region. The subtropical region consisting of the Mediterranean, northern Africa and the Middle East and the contiguous United States is likely to see a monthly summer temperature rise of more than 6°C.

#### Not too late – every reduction key

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We're not yet committed to surpassing 2°C global warming, but as Watson noted, we are quickly running out of time to realistically give ourselves a chance to stay below that 'danger limit'. However, 2°C is not a do-or-die threshold. Every bit of CO2 emissions we can reduce means that much avoided future warming, which means that much avoided climate change impacts. As Lonnie Thompson noted, the more global warming we manage to mitigate, the less adaption and suffering we will be forced to cope with in the future. Realistically, based on the current political climate (which we will explore in another post next week), limiting global warming to 2°C is probably the best we can do. However, there is a big difference between 2°C and 3°C, between 3°C and 4°C, and anything greater than 4°C can probably accurately be described as catastrophic, since various tipping points are expected to be triggered at this level. Right now, we are on track for the catastrophic consequences (widespread coral mortality, mass extinctions, hundreds of millions of people adversely impacted by droughts, floods, heat waves, etc.). But we're not stuck on that track just yet, and we need to move ourselves as far off of it as possible by reducing our greenhouse gas emissions as soon and as much as possible. There are of course many people who believe that the planet will not warm as much, or that the impacts of the associated climate change will be as bad as the body of scientific evidence suggests. That is certainly a possiblity, and we very much hope that their optimistic view is correct. However, what we have presented here is the best summary of scientific evidence available, and it paints a very bleak picture if we fail to rapidly reduce our greenhouse gas emissions. If we continue forward on our current path, catastrophe is not just a possible outcome, it is the most probable outcome. And an intelligent risk management approach would involve taking steps to prevent a catastrophic scenario if it were a mere possibility, let alone the most probable outcome. This is especially true since the most important component of the solution - carbon pricing - can be implemented at a relatively low cost, and a far lower cost than trying to adapt to the climate change consequences we have discussed here (Figure 4).

#### Global warming collapses biodiversity and destroys ecosystem resiliency – makes extinction inevitable

Potsdam Institute, 2012 (Potsdam Institute for Climate Impact Research and Climate Analytics, “Turn Down the Heat: Why a 4°C Warmer World Must be Avoided”, A report for the World Bank, November, http://climatechange.worldbank.org/sites/default/files/Turn\_Down\_the\_heat\_Why\_a\_4\_degree\_centrigrade\_warmer\_world\_must\_be\_avoided.pdf)

Ecosystems and their species provide a range of important goods and services for human society. These include water, food, cultural and other values. In the AR4 an assessment of climate change effects on ecosystems and their services found the following: • If greenhouse gas emissions and other stresses continue at or above current rates, the resilience of many ecosystems is likely to be exceeded by an unprecedented combination of change in climate, associated disturbances (for example, flooding, drought, wildfire, insects, and ocean acidification) and other stressors (global change drivers) including land use change, pollution and over-exploitation of resources. • Approximately 20 to 30 percent of plant and animal species assessed so far are likely to be at increased risk of extinction, if increases in global average temperature exceed of 2–3° above preindustrial levels. • For increases in global average temperature exceeding 2 to 3° above preindustrial levels and in concomitant atmospheric CO2 concentrations, major changes are projected in ecosystem structure and function, species’ ecological interactions and shifts in species’ geographical ranges, with predominantly negative consequences for biodiversity and ecosystem goods and services, such as water and food supply. It is known that past large-scale losses of global ecosystems and species extinctions have been associated with rapid climate change combined with other ecological stressors. Loss and/or degradation of ecosystems, and rates of extinction because of human pressures over the last century or more, which have intensified in recent decades, have contributed to a very high rate of extinction by geological standards. It is well established that loss or degradation of ecosystem services occurs as a consequence of species extinctions, declining species abundance, or widespread shifts in species and biome distributions (Leadley et al. 2010). Climate change is projected to exacerbate the situation. This section outlines the likely consequences for some key ecosystems and for biodiversity. The literature tends to confirm the conclusions from the AR4 outlined above. Despite the existence of detailed and highly informative case studies, upon which this section will draw, it is also important to recall that there remain many uncertainties (Bellard, Bertelsmeier, Leadley, Thuiller, and Courchamp, 2012). However, threshold behavior is known to occur in biological systems (Barnosky et al. 2012) and most model projections agree on major adverse consequences for biodiversity in a 4°C world (Bellard et al., 2012). With high levels of warming, coalescing human induced stresses on ecosystems have the potential to trigger large-scale ecosystem collapse (Barnosky et al. 2012). Furthermore, while uncertainty remains in the projections, there is a risk not only of major loss of valuable ecosystem services, particularly to the poor and the most vulnerable who depend on them, but also of feedbacks being initiated that would result in ever higher CO2 emissions and thus rates of global warming. Significant effects of climate change are already expected for warming well below 4°C. In a scenario of 2.5°C warming, severe ecosystem change, based on absolute and relative changes in carbon and water fluxes and stores, cannot be ruled out on any continent (Heyder, Schaphoff, Gerten, & Lucht, 2011). If warming is limited to less than 2°C, with constant or slightly declining precipitation, small biome shifts are projected, and then only in temperate and tropical regions. Considerable change is projected for cold and tropical climates already at 3°C of warming. At greater than 4°C of warming, biomes in temperate zones will also be substantially affected. These changes would impact not only the human and animal communities that directly rely on the ecosystems, but would also exact a cost (economic and otherwise) on society as a whole, ranging from extensive loss of biodiversity and diminished land cover, through to loss of ecosystems services such as fisheries and forestry (de Groot et al., 2012; Farley et al., 2012). Ecosystems have been found to be particularly sensitive to geographical patterns of climate change (Gonzalez, Neilson, Lenihan, and Drapek, 2010). Moreover, ecosystems are affected not only by local changes in the mean temperature and precipitation, along with changes in the variability of these quantities and changes by the occurrence of extreme events. These climatic variables are thus decisive factors in determining plant structure and ecosystem composition (Reu et al., 2011). Increasing vulnerability to heat and drought stress will likely lead to increased mortality and species extinction. For example, temperature extremes have already been held responsible for mortality in Australian flying-fox species (Welbergen, Klose, Markus, and Eby 2008), and interactions between phenological changes driven by gradual climate changes and extreme events can lead to reduced fecundity (Campbell et al. 2009; Inouye, 2008). Climate change also has the potential to facilitate the spread and establishment of invasive species (pests and weeds) (Hellmann, Byers, Bierwagen, & Dukes, 2008; Rahel & Olden, 2008) with often detrimental implications for ecosystem services and biodiversity. Human land-use changes are expected to further exacerbate climate change driven ecosystem changes, particularly in the tropics, where rising temperatures and reduced precipitation are expected to have major impacts (Campbell et al., 2009; Lee & Jetz, 2008). Ecosystems will be affected by the increased occurrence of extremes such as forest loss resulting from droughts and wildfire exacerbated by land use and agricultural expansion (Fischlin et al., 2007). Climate change also has the potential to catalyze rapid shifts in ecosystems such as sudden forest loss or regional loss of agricultural productivity resulting from desertification (Barnosky et al., 2012). The predicted increase in extreme climate events would also drive dramatic ecosystem changes (Thibault and Brown 2008; Wernberg, Smale, and Thomsen 2012). One such extreme event that is expected to have immediate impacts on ecosystems is the increased rate of wildfire occurrence. Climate change induced shifts in the fire regime are therefore in turn powerful drivers of biome shifts, potentially resulting in considerable changes in carbon fluxes over large areas (Heyder et al., 2011; Lavorel et al., 2006) It is anticipated that global warming will lead to global biome shifts (Barnosky et al. 2012). Based on 20th century observations and 21st century projections, poleward latitudinal biome shifts of up to 400 km are possible in a 4° C world (Gonzalez et al., 2010). In the case of mountaintop ecosystems, for example, such a shift is not necessarily possible, putting them at particular risk of extinction (La Sorte and Jetz, 2010). Species that dwell at the upper edge of continents or on islands would face a similar impediment to adaptation, since migration into adjacent ecosystems is not possible (Campbell, et al. 2009; Hof, Levinsky, Araújo, and Rahbek 2011). The consequences of such geographical shifts, driven by climatic changes as well as rising CO2 concentrations, would be found in both reduced species richness and species turnover (for example, Phillips et al., 2008; White and Beissinger 2008). A study by (Midgley and Thuiller, 2011) found that, of 5,197 African plant species studied, 25–42 percent could lose all suitable range by 2085. It should be emphasized that competition for space with human agriculture over the coming century is likely to prevent vegetation expansion in most cases (Zelazowski et al., 2011) Species composition changes can lead to structural changes of the entire ecosystem, such as the increase in lianas in tropical and temperate forests (Phillips et al., 2008), and the encroachment of woody plants in temperate grasslands (Bloor et al., 2008, Ratajczak et al., 2012), putting grass-eating herbivores at risk of extinction because of a lack of food available—this is just one example of the sensitive intricacies of ecosystem responses to external perturbations. There is also an increased risk of extinction for herbivores in regions of drought-induced tree dieback, owing to their inability to digest the newly resident C4 grasses (Morgan et al., 2008). The following provides some examples of ecosystems that have been identified as particularly vulnerable to climate change. The discussion is restricted to ecosystems themselves, rather than the important and often extensive impacts on ecosystems services. Boreal-temperate ecosystems are particularly vulnerable to climate change, although there are large differences in projections, depending on the future climate model and emission pathway studied. Nevertheless there is a clear risk of large-scale forest dieback in the boreal-temperate system because of heat and drought (Heyder et al., 2011). Heat and drought related die-back has already been observed in substantial areas of North American boreal forests (Allen et al., 2010), characteristic of vulnerability to heat and drought stress leading to increased mortality at the trailing edge of boreal forests. The vulnerability of transition zones between boreal and temperate forests, as well as between boreal forests and polar/tundra biomes, is corroborated by studies of changes in plant functional richness with climate change (Reu et al., 2011), as well as analyses using multiple dynamic global vegetation models (Gonzalez et al., 2010). Subtle changes within forest types also pose a great risk to biodiversity as different plant types gain dominance (Scholze et al., 2006). Humid tropical forests also show increasing risk of major climate induced losses. At 4°C warming above pre-industrial levels, the land extent of humid tropical forest, characterized by tree species diversity and biomass density, is expected to contract to approximately 25 percent of its original size [see Figure 3 in (Zelazowski et al., 2011)], while at 2°C warming, more than 75 percent of the original land can likely be preserved. For these ecosystems, water availability is the dominant determinant of climate suitability (Zelazowski et al., 2011). In general, Asia is substantially less at risk of forest loss than the tropical Americas. However, even at 2°C, the forest in the Indochina peninsula will be at risk of die-back. At 4°C, the area of concern grows to include central Sumatra, Sulawesi, India and the Philippines, where up to 30 percent of the total humid tropical forest niche could be threatened by forest retreat (Zelazowski et al., 2011). There has been substantial scientific debate over the risk of a rapid and abrupt change to a much drier savanna or grassland ecosystem under global warming. This risk has been identified as a possible planetary tipping point at around a warming of 3.5–4.5°C, which, if crossed, would result in a major loss of biodiversity, ecosystem services and the loss of a major terrestrial carbon sink, increasing atmospheric CO2 concentrations (Lenton et al., 2008)(Cox, et al., 2004) (Kriegler, Hall, Held, Dawson, and Schellnhuber, 2009). Substantial uncertainty remains around the likelihood, timing and onset of such risk due to a range of factors including uncertainty in precipitation changes, effects of CO2 concentration increase on water use efficiency and the CO2 fertilization effect, land-use feedbacks and interactions with fire frequency and intensity, and effects of higher temperature on tropical tree species and on important ecosystem services such as pollinators. While climate model projections for the Amazon, and in particular precipitation, remain quite uncertain recent analyses using IPCC AR4 generation climate indicates a reduced risk of a major basin wide loss of precipitation compared to some earlier work. If drying occurs then the likelihood of an abrupt shift to a drier, less biodiverse ecosystem would increase. Current projections indicate that fire occurrence in the Amazon could double by 2050, based on the A2 SRES scenario that involves warming of approximately 1.5°C above pre-industrial levels (Silvestrini et al., 2011), and can therefore be expected to be even higher in a 4°C world. Interactions of climate change, land use and agricultural expansion increase the incidence of fire (Aragão et al., 2008), which plays a major role in the (re)structuring of vegetation (Gonzalez et al., 2010; Scholze et al., 2006). A decrease in precipitation over the Amazon forests may therefore result in forest retreat or transition into a low biomass forest (Malhi et al., 2009). Moderating this risk is a possible increase in ecosystem water use efficiency with increasing CO2 concentrations is accounted for, more than 90 percent of the original humid tropical forest niche in Amazonia is likely to be preserved in the 2°C case, compared to just under half in the 4°C warming case (see Figure 5 in Zelazowski et al., 2011) (Cook, Zeng, and Yoon, 2012; Salazar & Nobre, 2010). Recent work has analyzed a number of these factors and their uncertainties and finds that the risk of major loss of forest due to climate is more likely to be regional than Amazon basin-wide, with the eastern and southeastern Amazon being most at risk (Zelazowski et al., 2011). Salazar and Nobre (2010) estimates a transition from tropical forests to seasonal forest or savanna in the eastern Amazon could occur at warming at warming of 2.5–3.5°C when CO2 fertilization is not considered and 4.5–5.5°C when it is considered. It is important to note, as Salazar and Nobre (2010) point out, that the effects of deforestation and increased fire risk interact with the climate change and are likely to accelerate a transition from tropical forests to drier ecosystems. Increased CO2 concentration may also lead to increased plant water efficiency (Ainsworth and Long, 2005), lowering the risk of plant die-back, and resulting in vegetation expansion in many regions, such as the Congo basin, West Africa and Madagascar (Zelazowski et al., 2011), in addition to some dry-land ecosystems (Heyder et al., 2011). The impact of CO2 induced ‘greening’ would, however, negatively affect biodiversity in many ecosystems. In particular encroachment of woody plants into grasslands and savannahs in North American grassland and savanna communities could lead to a decline of up to 45 percent in species richness ((Ratajczak and Nippert, 2012) and loss of specialist savanna plant species in southern Africa (Parr, Gray, and Bond, 2012). Mangroves are an important ecosystem and are particularly vulnerable to the multiple impacts of climate change, such as: rise in sea levels, increases in atmospheric CO2 concentration, air and water temperature, and changes in precipitation patterns. Sea-level rise can cause a loss of mangroves by cutting off the flow of fresh water and nutrients and drowning the roots (Dasgupta, Laplante et al. 2010). By the end of the 21st century, global mangrove cover is projected to experience a significant decline because of heat stress and sea-level rise (Alongi, 2008; Beaumont et al., 2011). In fact, it has been estimated that under the A1B emissions scenario (3.5°C relative to pre-industrial levels) mangroves would need to geographically move on average about 1 km/year to remain in suitable climate zones (Loarie et al., 2009). The most vulnerable mangrove forests are those occupying low-relief islands such as small islands in the Pacific where sea-level rise is a dominant factor. Where rivers are lacking and/ or land is subsiding, vulnerability is also high. With mangrove losses resulting from deforestation presently at 1 to 2 percent per annum (Beaumont et al., 2011), climate change may not be the biggest immediate threat to the future of mangroves. However if conservation efforts are successful in the longer term climate change may become a determining issue (Beaumont et al., 2011). Coral reefs are acutely sensitive to changes in water temperatures, ocean pH and intensity and frequency of tropical cyclones. Mass coral bleaching is caused by ocean warming and ocean acidification, which results from absorption of CO2 (for example, Frieler et al., 2012a). Increased sea-surface temperatures and a reduction of available carbonates are also understood to be driving causes of decreased rates of calcification, a critical reef-building process (De’ath, Lough, and Fabricius, 2009). The effects of climate change on coral reefs are already apparent. The Great Barrier Reef, for example, has been estimated to have lost 50 percent of live coral cover since 1985, which is attributed in part to coral bleaching because of increasing water temperatures (De’ath et al., 2012). Under atmospheric CO2 concentrations that correspond to a warming of 4°C by 2100, reef erosion will likely exceed rates of calcification, leaving coral reefs as “crumbling frameworks with few calcareous corals” (Hoegh-Guldberg et al., 2007). In fact, frequency of bleaching events under global warming in even a 2°C world has been projected to exceed the ability of coral reefs to recover. The extinction of coral reefs would be catastrophic for entire coral reef ecosystems and the people who depend on them for food, income and shoreline. Reefs provide coastal protection against coastal floods and rising sea levels, nursery grounds and habitat for a variety of currently fished species, as well as an invaluable tourism asset. These valuable services to often subsistence-dependent coastal and island societies will most likely be lost well before a 4°C world is reached. The preceding discussion reviewed the implications of a 4°C world for just a few examples of important ecosystems. The section below examines the effects of climate on biological diversity Ecosystems are composed ultimately of the species and interactions between them and their physical environment. Biologically rich ecosystems are usually diverse and it is broadly agreed that there exists a strong link between this biological diversity and ecosystem productivity, stability and functioning (McGrady-Steed, Harris, and Morin, 1997; David Tilman, Wedin, and Knops, 1996)(Hector, 1999; D Tilman et al., 2001). Loss of species within ecosystems will hence have profound negative effects on the functioning and stability of ecosystems and on the ability of ecosystems to provide goods and services to human societies. It is the overall diversity of species that ultimately characterizes the biodiversity and evolutionary legacy of life on Earth. As was noted at the outset of this discussion, species extinction rates are now at very high levels compared to the geological record. Loss of those species presently classified as ‘critically endangered’ would lead to mass extinction on a scale that has happened only five times before in the last 540 million years. The loss of those species classified as ‘endangered’ and ‘vulnerable’ would confirm this loss as the sixth mass extinction episode (Barnosky 2011). Loss of biodiversity will challenge those reliant on ecosystems services. Fisheries (Dale, Tharp, Lannom, and Hodges, 2010), and agronomy (Howden et al., 2007) and forestry industries (Stram & Evans, 2009), among others, will need to match species choices to the changing climate conditions, while devising new strategies to tackle invasive pests (Bellard, Bertelsmeier, Leadley, Thuiller, and Courchamp, 2012). These challenges would have to be met in the face of increasing competition between natural and agricultural ecosystems over water resources. Over the 21st-century climate change is likely to result in some bio-climates disappearing, notably in the mountainous tropics and in the poleward regions of continents, with new, or novel, climates developing in the tropics and subtropics (Williams, Jackson, and Kutzbach, 2007). In this study novel climates are those where 21st century projected climates do not overlap with their 20th century analogues, and disappearing climates are those 20th century climates that do not overlap with 21st century projected climates. The projections of Williams et al (2007) indicate that in a 4°C world (SRES A2), 12–39 percent of the Earth’s land surface may experience a novel climate compared to 20th century analogues. Predictions of species response to novel climates are difficult because researchers have no current analogue to rely upon. However, at least such climates would give rise to disruptions, with many current species associations being broken up or disappearing entirely. Under the same scenario an estimated 10–48 percent of the Earth’s surface including highly biodiverse regions such as the Himalayas, Mesoamerica, eastern and southern Africa, the Philippines and the region around Indonesia known as Wallacaea would lose their climate space. With limitations on how fast species can disperse, or move, this indicates that many species may find themselves without a suitable climate space and thus face a high risk of extinction. Globally, as in other studies, there is a strong association apparent in these projections between regions where the climate disappears and biodiversity hotspots. Limiting warming to lower levels in this study showed substantially reduced effects, with the magnitude of novel and disappearing climates scaling linearly with global mean warming. More recent work by Beaumont and colleagues using a different approach confirms the scale of this risk (Beaumont et al., 2011, Figure 36). Analysis of the exposure of 185 eco-regions of exceptional biodiversity (a subset of the so-called Global 200) to extreme monthly temperature and precipitation conditions in the 21st century compared to 1961–1990 conditions shows that within 60 years almost all of the regions that are already exposed to substantial environmental and social pressure, will experience extreme temperature conditions based on the A2 emission scenario (4.1°C global mean temperature rise by 2100) (Beaumont et al., 2011). Tropical and sub-tropical eco-regions in Africa and South America are particularly vulnerable. Vulnerability to such extremes is particularly acute for high latitude and small island biota, which are very limited in their ability to respond to range shifts, and to those biota, such as flooded grassland, mangroves and desert biomes, that would require large geographical displacements to find comparable climates in a warmer world. The overall sense of recent literature confirms the findings of the AR4 summarized at the beginning of the section, with a number of risks such as those to coral reefs occurring at significantly lower temperatures than estimated in that report. Although non-climate related human pressures are likely to remain a major and defining driver of loss of ecosystems and biodiversity in the coming decades, it is also clear that as warming rises so will the predominance of climate change as a determinant of ecosystem and biodiversity survival. While the factors of human stresses on ecosystems are manifold, in a 4°C world, climate change is likely to become a determining driver of ecosystem shifts and large-scale biodiversity loss (Bellard et al., 2012; New et al., 2011). Recent research suggests that large-scale loss of biodiversity is likely to occur in a 4°C world, with climate change and high CO2 concentration driving a transition of the Earth´s ecosystems into a state unknown in human experience. Such damages to ecosystems would be expected to dramatically reduce the provision of ecosystem services on which society depends (e.g., hydrology—quantity flow rates, quality; fisheries (corals), protection of coastline (loss of mangroves). Barnosky has described the present situation facing the biodiversity of the planet as “the perfect storm” with multiple high intensity ecological stresses because of habitat modification and degradation, pollution and other factors, unusually rapid climate change and unusually high and elevated atmospheric CO2 concentrations. In the past, as noted above, this combination of circumstances has led to major, mass extinctions with planetary consequences. Thus, there is a growing risk that climate change, combined with other human activities, will cause the irreversible transition of the Earth´s ecosystems into a state unknown in human experience (Barnosky et al., 2012).

### Plan – wake

#### The United States federal government should increase statutory restrictions on the War Powers authority of the President by requiring congressional approval before entering armed forces into hostilities to prevent proliferation.

### Contention Two: Solvency

#### Obama’s counter-prolif posture is based on the Bush Doctrine interp of war powers authority to preempt

Mathew Waxman, September 11, 2013. “The Most Puzzling Line of the President’s Speech,” http://www.lawfareblog.com/2013/09/the-most-puzzling-line-of-the-presidents-speech/

My first question is to what he’s referring here, or to which part of the past decade. President Bush undoubtedly held very broad views of war powers, but the two major wars embarked up during his presidency, in Afghanistan and Iraq, were clearly congressionally authorized, and Congress has played a significant role in pushing their wind-down. The 2011 Libya intervention, by contrast, was not congressionally authorized, and the Obama administration adopted the view that the War Powers Resolution did not apply to the operations there (which, unlike the contemplated Syria operations, aimed to help bring down a regime). The Obama administration has also resisted the idea that Congress should re-examine the 2001 Authorization for Use of Military Force, which has been interpreted to apply in geographically broad ways that may or may not have been intended by Congress at the time it was adopted. My second question is why, if he believes it’s problematic that more and more war-making power has been put in the hands of the President to the exclusion of Congress, President Obama also adopts the position that he possesses unilateral constitutional authority to act in this case. We haven’t yet seen the underlying legal opinion and analysis, but Jack has pointed out here that in asserting the authority to act independently the Obama administration may be extending, not pulling back on, previous OLC reasoning about presidential power to use force. My third question is about effectiveness. I agree that as a general matter “America acts more effectively abroad when we stand together,” but which is better for the strategic goal Obama lays out here of deterring future chemical weapon use through limited strikes: a more congressionally constrained presidential power or a more flexible one? A President with broad unilateral authority, or a system of strong, formal constitutional checks? I’ve been thinking and writing recently about the relationship between constitutional allocation of war powers and strategies of deterrence or coercive diplomacy, and I believe that even without formally voting to authorize force or not, Congress plays an important role in politically constraining the President and in signaling abroad – to adversaries and allies alike – about our policy preferences and resolve. Part of what worries me about the President’s current approach is that even if the President can win a congressional vote to strike Syria in this instance, the debate so far has shown weak congressional commitment to a global chemical-weapons policing policy – which is what the President claims is important to U.S. security interests (“As the ban against these weapons erodes, other tyrants will have no reason to think twice about acquiring poison gas, and using them”).

#### Statutory restrictions control the perception of force posture – Congressional complicity with Bush doctrine authority implies “green-light” to preempt

Bacevich, 2007 (Andrew, professor of history and international relations at Boston University, “Rescinding the Bush Doctrine”, Boston News, March 1, http://www.boston.com/news/globe/editorial\_opinion/oped/articles/2007/03/01/rescinding\_the\_bush\_doctrine/)

RATHER THAN vainly sniping at President Bush over his management of the Iraq war, the Democratic-controlled Congress ought to focus on averting any recurrence of this misadventure. Decrying the so-called "surge" or curbing the president's authority to conduct ongoing operations will contribute little to that end. Legislative action to foreswear preventive war might contribute quite a lot. Long viewed as immoral, illicit, and imprudent, preventive war -- attacking to keep an adversary from someday posing a danger -- became the centerpiece of US national security strategy in the aftermath of 9/11. President Bush unveiled this new strategy in a speech at West Point in June 2002. "If we wait for threats to fully materialize," he said, "we will have waited too long." The new imperative was to strike before threats could form. Bush declared it the policy of the United States to "impose preemptive, unilateral military force when and where it chooses." Although the Constitution endows the legislative branch with the sole authority to declare war, the president did not consult Congress before announcing his new policy. He promulgated the Bush Doctrine by fiat. Then he acted on it. In 2003, Saddam Hussein posed no immediate threat to the United States; arguing that he might one day do so, the administration depicted the invasion of Iraq as an act of anticipatory self-defense. To their everlasting shame, a majority of members in both the House and the Senate went along, passing a resolution that "authorized" the president to do what he was clearly intent on doing anyway. Implicitly, the Bush Doctrine received congressional endorsement. Events since have affirmed the wisdom of seeing preventive war as immoral, illicit, and imprudent. The Bush administration expected a quick, economical, and decisive victory in Iraq. Advertising the war as an effort to topple a brutal dictator and liberate an oppressed people, it no doubt counted on battlefield success to endow the enterprise with a certain ex post facto legitimacy. Elated Iraqis showering American soldiers with flowers and candies would silence critics who condemned the war as morally unjustified and patently illegal. None of these expectations has come to pass. In its trial run, the Bush Doctrine has been found wanting. Today, Iraq teeters on the brink of disintegration. The war's costs, already staggering, continue to mount. Violence triggered by the US invasion has killed thousands of Iraqi civilians. We cannot fully absolve ourselves of responsibility for those deaths. Our folly has alienated friends and emboldened enemies. Rather than nipping in the bud an ostensibly emerging threat, the Iraq war has diverted attention from existing dangers (such as Al Qaeda) while encouraging potential adversaries (like Iran) to see us as weak. The remedy to this catastrophic failure lies not in having another go -- a preventive attack against Iran, for example -- but in acknowledging that the Bush Doctrine is inherently pernicious. Our reckless flirtation with preventive war qualifies as not only wrong, but also stupid. Indeed, the Bush Doctrine poses a greater danger to the United States than do the perils it supposedly guards against. We urgently need to abrogate that doctrine in favor of principles that reflect our true interests and our professed moral values. Here lies an opportunity for Congress to make a difference. The fifth anniversary of President Bush's West Point speech approaches. Prior to that date, Democratic leaders should offer a binding resolution that makes the following three points: First, the United States categorically renounces preventive war. Second, the United States will henceforth consider armed force to be an instrument of last resort. Third, except in response to a direct attack on the United States, any future use of force will require prior Congressional authorization, as required by the Constitution. The legislation should state plainly our determination to defend ourselves and our allies. But it should indicate no less plainly that the United States no longer claims the prerogative of using "preemptive, unilateral military force when and where it chooses." Declaring the Bush Doctrine defunct will not solve the problems posed by Iraq, but it will reduce the likelihood that we will see more Iraqs in our future. By taking such action, Congress will restore its relevance, its badly tarnished honor, and its standing in the eyes of the American people.

#### Broad development of nuclear energy is slow now – preempting prolif cements the “nuclear suppliers cartel,” killing technology trade and civilian growth

Mueller, 2008 (John, Dept of Political Science at Ohio State University, “The Costs and Consequences of Efforts to Prevent Proliferation”, July 16, http://politicalscience.osu.edu/faculty/jmueller//apsa08.pdf)

The nonproliferation focus has also exacerbated the nuclear waste problem in the United States. In the late 1970s, the Carter administration banned the reprocessing of nuclear fuel, something that radically reduces the amount of nuclear waste, under the highly questionable assumption that this policy would reduce the danger of nuclear proliferation. Nonproliferation efforts worldwide also hamper worldwide economic development by increasing the effective costs of developing nuclear energy--sometimes even making them prohibitive for some countries. As countries grow, they require ever increasing amounts of power. Any measure that limits their ability to acquire this vital commodity--or increases its price--effectively slows economic growth and essentially kills people by reducing the gains in life expectancy commonly afforded by economic development. The Non-Proliferation Treaty specifically guarantees to signing nonnuclear countries "the fullest possible exchange of technology" for the development of peaceful nuclear power. However, as Richard Betts points out, this rationale has been undermined by the development of a "nuclear suppliers cartel" which has worked to "cut off trade in technology for reprocessing plutonium or enriching uranium," thereby reducing the NPT to "a simple demand to the nuclear weapons have-nots to remain so."49 More broadly the nonproliferation quest has from time to time boosted international oil prices to the detriment of almost all the countries in the world except for the potential proliferator. Because nuclear power does not emit greenhouse gases, it is an obvious potential candidate for helping with the problem of global warming, an issue many people hold to be of the highest concern for the future of the planet.

#### Aff signal encourages suppliers – dual-use tech raises security flags – US posture is the number one factor in willingness to assist developing nuclear powers

Kate Davidson, UNE Business School Faculty of the Professions, University of New England, 2012. “Contemporary Perspectives on Nuclear Proliferation,” http://www.une.edu.au/\_\_data/assets/pdf\_file/0008/24110/econwp12-2.pdf

The role of the United States in matters of proliferation cannot be emphasised enough. In the Cold War period, the foreign policies of both the US and the Soviet Union were by and large premised upon nuclear matters and necessarily shaped the nuclear field we are faced with today. Post Cold War, US policy has dominated international interactions. The US does contribute enormously to the development of norms; however its own influence extends beyond and almost independently of these norms. In typical “do as I say, not as I do” style, the US exerts huge pressures on states to follow the path of non-proliferation despite their own attachment to nuclear weapons. Levite (2002/03, p76) acknowledges the “glaring omission” in the literature of a “systematic assessment of the vast array of non-proliferation instruments and assets employed by the United States across the cases of nuclear restraint and reversal”, mounting a convincing argument36 based on the claim that “an understanding with the United States is, in fact, a hallmark of many cases of nuclear slowdown or reversal” (p82). She contends that the US is least influential in effecting the nature of domestic regimes which shape nuclear ambitions, concluding that “success is within reach only to the extent that foreign influence and domestic conditions converge, and the foreign effort is closely tuned (in terms of both agenda and timing) to the domestic context” (p87). While the mechanisms by which the US asserts its influence are many and varied37, the hegemon’s role in non-proliferation is deemed to be fundamental.¶ Following on from this, since the US has been so willing to “purchase” non- proliferation through various means perhaps this leads states to making small developments towards the nuclear end which they can then “sell” in order to enhance their economic or diplomatic standing. Japan and North Korea have been implicated in such actions, and it is certainly a notion worth some consideration. It is also possible that Israel’s unwillingness to admit its own nuclear status is in part that doing so may compromise its foreign aid flows, particularly from the US.¶ The second and related issue of vital significance is the role of sanctions, both positive and negative, in non-proliferation measures. While such actions are inextricably linked with US policy and superpower, the theoretical grounding is markedly different. Quite fortunately for the purpose of this discussion, the very recent publishing of the book ‘Sanctions, Statecraft, and Nuclear Proliferation’ edited by Solingen (2012) addresses this very subject. While the authors focus largely on specific causal mechanisms, domestic distributional costs and benefits remain at the forefront and provide insight as to how sanctions and inducements, either targeted or comprehensive, can actually have unintended consequences, particularly given varying domestic political economy models and regime types.¶ As noted by Stein (2012, p30) although “sanctions are as old as antiquity”, they are more prevalent now than ever, but “ironically, sanctions can weaken a state absolutely¶ but also strengthen it relatively (to its society and domestic opposition)” (p55). That is, sanctions may actually support the regime which is driving a nuclear program and thereby strengthen its support – a counterproductive action by any standards. Similarly, Kreps and Pasha argue that military threats may make “good politics” domestically (p175), but empirically support the hypothesis that “military threats reinforce the coalitions that are hostile to international economic integration and cooperation with international regimes more generally” (p208) – the very regimes which Solingen argues are most likely to nuclearise.¶ Tying in with the initial point of discussion in this section, Nincic (2012) rethinks the US counter proliferation policy with regard to inducements, intuitively noting that “few measures could be fully effective when not initiated, or at least supported, by the world’s sole superpower” (p127). Observing the “abysmal failure and frequently counterproductive character of threats and punishment” (p153), Nincic pushes the role of positive engagement in non-proliferation measures. In a less US-centric rationale, Drezner (2012) claims “that more comprehensive economic sanctions – or more wide ranging inducements – will often be more likely to lead to the desired policy changes” than ‘smart sanctions’ which are specifically targeted to reduce externalities (p155).¶ The consistent failure of sanctions to procure desired outcomes is a theme throughout the various chapters. Solingen concludes by outlining three factors which burden the probability that sanctions would have the desired effects in the nuclear realm (2012, p347):¶ 1. Inward looking autocracies, being the most frequent targets of these sanctions, are also the least vulnerable to them.¶ 2. Selection bias results as “sanctions are expected to surface only when targets believe that concessions would risk regime survival more than defiance”. That is, targets receptive to inducements may pre-empt sanctions, leaving analysis of sanctions largely on inward-looking autocracies which “appear to be endogenous to why sanctions emerge as tools of statecraft to begin with”.¶ 3. Inward looking autocracies may price nuclear weapons markedly highly, justified as public goods, making them more resistant to comply with non-proliferation demands.¶ To illustrate the common use of these tools, Figure 6 shows the number of sanctions and inducements directed toward the four main targets of the period 1990 to 2009: North Korea, Libya, Iraq and Iran. From this the relative use of sanctions versus inducements for each target can be recognised, as can the dominance of the US in the utilisation of these tools. Other senders depicted in the legend of the Figure are non- US unilateral (Uni), United Nations (UN), and non-UN multilateral (Multi). It is also interesting to note that 78% of sanctions in the past three decades were imposed on non-democratic target states38, which gives rise to a possibility that perhaps discriminate treatment of non-democratic regimes by more powerful nations may provide incentive for nuclear weapon acquisition by the weaker state in a struggle for power. Or in other words, economic mistreatment gives rise to a perception of threatened security, which under the assumption of realism will provide motivation for nuclear weapon acquisition.¶ With Iran’s nuclear ambitions being so enthusiastically repressed at present, a few brief points are worth mentioning – the most obvious being that the huge numbers of sanctions have not worked. Stein notes the need to create an “international sanctioning cartel”39 can often “multilateralize an initial bilateral conflict” (p41). Unilateral sanctions are often ineffective or difficult to implement on their own and thus allies in sanctioning will often be sought. Drezner (2012, p167) points out that Iran “has been under some form of embargo for its entire existence, and the regime has grown comfortable with them”. Nader (2012) examines Iran in greater depth, finding it to be unclear whether sanctions have impacted Iran’s willingness to pursue its nuclear program but also suggesting the nation may actually thrive on a sense of political and economic isolation stemming from its ideology (p214). He concludes: “The regime’s survival is increasingly contingent on a favourable outcome regarding the nuclear program, whether it leads to a virtual or actual nuclear weapons capability. A sanctions regime contributing to Iran’s economic decline cannot alter this reality.” (p231)¶ A third point with regard to external incentives is, again, tied in tightly with the other two but worthy of mention: institutional organisations. A number of institutional non- proliferation measures have been already discussed: these include the IAEA, the UN, regional NWFZs and various other multilateral treaties. Through encouraging membership to these institutions and also utilising mechanisms under these structures, external pressure can be applied to nations in order to discourage them from developing nuclear weapons programs. The role of the US, and the use of sanctions and inducements by various nations, are both major features of any such institution, however, given the complex web of globalised trade and business patterns which have developed across the globe, the interactions of such institutions needs to be considered. ¶ While the subject of external incentives has focussed rather heavily on¶ discouraging proliferation, such circumstances may exist under which external pressures act in favour of nuclearisation. Aggressive marketing by nuclear technology companies may lead a nation down the path of nuclear energy, only to find its “Siamese twin” comes too**.** This now leads into the supply side explanation of ¶ proliferation. ¶ Access to nuclear technology: more able leads to more willing ¶ This theory of nuclear proliferation is a relatively new development in the literature40 ¶ and represents the supply side, positing that a state’s ability to build nuclear weapons ¶ will influence its probability of actually doing so. As nuclear technology has spread ¶ over the globe41¶ ¶ , the technical means of developing nuclear weapons has also spread ¶ through the dual purpose nature of the technology. The technical links between ¶ civilian nuclear facilities and military programs have previously been discussed, as has ¶ the notion of a virtual nuclear state, and it is important to remember that “whether or ¶ not a state wants a nuclear weapons is irrelevant if it is unable to acquire them” ¶ (Kroenig, 2009 p163). However, as many as fifty states could be considered to be ¶ nuclear weapons capable (Hymans, 2010 p13). The puzzle then is to explain the gap ¶ between the number of states which are technically capable of developing nuclear ¶ weapons and the number which actually choose to do so. Supply side theories seem to ¶ have relied heavily on empirical analysis, and as a result some of the quantitative ¶ proliferation literature will now be introduced to this discussion. ¶ Initially, there is a requirement that nuclear capability be defined. The possession of a ¶ nuclear reactor is obviously the first point required for a state to even be considered ¶ nuclear capable, however this is by no means sufficient. Contemporary literature has ¶ built on Meyer’s (1984) landmark book ‘The Dynamics of Nuclear Proliferation’ and ¶ Stoll’s (1996) revision of this data (cited in Sagan, 2011 p228). In defining nuclear ¶ latency, Meyer measured ten technical and economic indicators – previous national ¶ mining activity, indigenous uranium deposits, metallurgists, steel production, ¶ construction work force, chemical engineers, nitric acid production, electrical ¶ production capacity, nuclear engineers, physicists, chemists and explosives and ¶ electronics specialists42¶ ¶ . As neither the quantity or quality of a state’s nuclear ¶ engineers nor its explosives and electronics specialists could be accurately determined ¶ as being sufficient to develop a nuclear weapon, Meyer used two proxy indicators: ¶ whether the state had been operating a research reactor for three reactor years and ¶ whether the state manufactured automobiles, or assembled automobiles and ¶ manufactured radios and television sets. Based on these indicators, Meyer concluded ¶ that 34 states had the latent capability of building nuclear weapons in 1982 (cited in ¶ Sagan, 2011 p229). ¶ Stoll’s (1996) revision of the data set assumed that all states had access to nuclear ¶ materials since they were (purportedly) available on the open market, and thus ¶ “assumed away the crucial technical bottleneck of whether a state has access to ¶ uranium that, once enriched, could be used in a nuclear weapons program” (Sagan, ¶ 2011 p229). Stoll’s updated data set led to the conclusion that 48 states had latent ¶ weapons capability in 1992. ¶ ¶ Real world events brought supply side issues to the forefront of the proliferation ¶ debate and the 9/11 attack on the United States highlighted the potential role of non-¶ state actors in international conflict. Furthermore, the uncovering of the AQ Khan ¶ network of supplying nuclear equipment and knowledge, and the apparent ¶ nuclearisation of North Korea (more on these later) demonstrated that supply chains ¶ of nuclear material and technology were out of control, and the notion of second tier ¶ proliferation became a subject for debate. Braun and Chyba (2004) point to three ¶ challenges to the non-proliferation regime: ¶ ¶ i. Latent proliferation under the Non-proliferation Treaty ¶ ¶ ii. First tier nuclear proliferation, in which technology or material is ¶ stolen from private companies or state nuclear programs assists ¶ non-nuclear weapon states develop illegal programs ¶ ¶ iii. Second tier proliferation in which states in the developing world with ¶ varying technical capabilities trade amongst themselves to bolster ¶ one another’s nuclear and strategic weapons efforts ¶ ¶ They explore the proliferation “ring” formed by strategic alliances and trade occurring ¶ between and among a list of nations, most notably Pakistan, North Korea, Libya, Iran ¶ and Iraq. This inspired a greater focus on the supply of nuclear technology globally ¶ and more pertinently, the need to better understand the relationship between access ¶ to nuclear technology and materials, and weapons proliferation itself. ¶ ¶ Data coding applied to proliferation studies were further developed by Jo and Gartzke ¶ (2007), who considered the determinants of nuclear proliferation in terms of ¶ opportunity and willingness (p168). On the supply-side, they further organised ¶ opportunity into three categories (p169): the set of technologies related to the ¶ manufacture of nuclear weapons, nuclear fissile materials, and economic capacity. ¶ They then devised three variables upon which to base their analysis (Jo and Gartzke, ¶ 2007 p172-3). First, latent nuclear weapons production capability was constructed by ¶ summing resource and production capacities using seven components: uranium ¶ deposits, metallurgists, chemical engineers, and nuclear ¶ engineers/physicists/chemists, electronic/explosive specialists, nitric acid production ¶ capacity, and electricity production capacity. Second, economic capacity was ¶ constructed using data relating to states’ energy consumption and iron/steel ¶ production. Third, diffusion of knowledge of how to build nuclear weapons was ¶ assumed to occur, and quantified using a log transformation of years passed since ¶ 1938. The dependent variables were dichotomous and coded annually: NWEAPON ¶ identified whether states had a nuclear weapon in the given year, and NPROGRAM a ¶ nuclear weapons program. ¶ ¶ In relation to nuclear proliferation opportunity, they found that latent nuclear ¶ production capabilities increased the predicted probability of having a weapons ¶ program, but did not impact the conditional decision to produce weapons. ¶ Furthermore they concluded that barriers to proliferation ease with the diffusion of ¶ time. This data set was a significant step in the quantitative approach to proliferation ¶ studies and is very widely cited, thus warrants discussion here despite doing little to ¶ actually define nuclear latency. Their measure of nuclear latency was a simple scale ¶ from zero to seven reflecting the seven components of the index. Sagan (2011, p229) ¶ is quite critical of Jo and Gartzke’s coding, claiming the failure to treat possession of ¶ fissile materials as necessary for nuclear capability as inadequate. The shortcomings¶ of their coding rules are evidenced by the fact that North Korea and South Africa are ¶ both considered to not have full capability to develop weapons in 200143¶ ¶ (ibid). ¶ More recently, the supply side proliferation literature has explored the relationship between civilian nuclear assistance and nuclear proliferation. Matthew Fuhrmann has contributed enormously to the proliferation literature to this end44. He explored the determinants of dual-use trade (2008), defining dual-use commodities as having two ¶ applications: “they can be used in weapons of mass destruction (WMD) programs but ¶ also have many legitimate civilian applications” (p634). With most governments placing restrictions on the export of such commodities he was able to analyse licensed dual-use exports from the US between 1991 and 2001 (post Cold War era). He concludes his research to be “preliminary support for the assertion that states channel dual-use trade towards destinations where security guarantees exist and away from targets where security threats are present to minimise its potentially negative security externalities” 45¶ ¶ (p648). Following from this, Fuhrmann (2009a) explores whether the diffusion of knowledge makes proliferation more likely and further examines the determinants of civilian nuclear cooperation (2009b). These works tie in with the ¶ research of Matthew Kroenig, another significant contributor on the topic of nuclear ¶ assistance.

#### It’s reverse-causal – supplier perception is key to nuclear expansion – secure financing trumps obstacles

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The largest increases in nuclear capacity in the next 20-30 years undoubtedly will occur in Asia, specifically, China, Japan, South Korea, and India. These countries are building nuclear power plants now and anticipate continued high economic growth levels. Other countries could feel the pinch of the current financial crisis more acutely, dampening demand for electricity below anticipated levels. A major expansion of nuclear power across the board, however, is not a foregone conclusion.¶ In addition, the traditional challenges besetting nuclear energy—cost, safety, waste, and proliferation—will likely continue to limit widespread growth. Government policies supporting nuclear energy in the future—as has been the case in the past—would be necessary to make major expansion a reality.¶ For many states, cost is the first and most immediate obstacle to nuclear expansion. But in those states where there is heavy involvement by the government in electricity markets, supporting nuclear energy may be as simple as providing government funding or financing. Solutions to nuclear waste tend to be deferred into the future, but policies by major suppliers to take back spent fuel could provide some incentives for growth. In states seeking nuclear power for the first time, actions to develop what some have termed the “three Ss”—safeguards, safety, and security— could improve their attractiveness to nuclear vendors. In all countries, some limits on, or costs attached to, carbon dioxide emissions could help enhance the attractiveness of nuclear power, but these should also enhance the attractiveness of renewable sources of energy as well.

#### The prolif dilemma underlies all nuclear energy development – relaxing posture is key to safe distribution at a scale large enough to solve warming

Squassoni, 2009 (Sharon, Senior associate at the Carnegie Endowment for International Peace focusing on nuclear nonproliferation and national security, “Nuclear Power: How Much More?” Nuclear Policy Education Center, March 25, http://www.npolicy.org/article.php?aid=176&rid=2)

The amount of nuclear capacity required to make a signification contribution to global climate change mitigation is so large that it would inevitably be widely distributed across the globe. Such a distribution would have particular implications for nuclear proliferation. However, projected distributions of nuclear energy out to 2050 are extremely speculative. The industry itself does not engage in such projections, and countries that set nuclear energy production goals have a history of widely missing long-range targets, such as China and India. The discussion below considers a hypothetical distribution of nuclear energy for 2050, based on the 2003 MIT Study. [12] Scenario III, shown in Figure 7, uses the “High 2050” scenario in Appendix 2 (“Global Electricity Demand and the Nuclear Power Growth Scenario”) of the 2003 MIT study, The Future of Nuclear Power. Although this is not a distribution designed to achieve optimal CO2 reductions, it is expansion at a level significant enough (1500 GWe) to have an effect on CO2 emissions. This would mean a fourfold increase from current reactor capacity. The MIT study used an underlying assumption that the developed countries would continue with a modest annual increase in per capita electricity use and the developing countries would move to the 4000 kWh per person per year benchmark if at all feasible (the 4000 kWh benchmark being the dividing line between developed and advanced countries). Electricity demand was then pegged to estimated population growth. Finally, it was assumed that nuclear energy would retain or increase its current share of electricity generation. The least-off developing countries were assumed in the MIT study not to have the wherewithal for nuclear energy. It should be noted that MIT’s 2050 projection was “an attempt to understand what the distribution of nuclear power deployment would be if robust growth were realized, perhaps driven by a broad commitment to reducing greenhouse gas emissions and a concurrent resolution of the various challenges confronting nuclear power’s acceptance in various countries.” A few countries that the MIT High 2050 case included but are not included here are countries that currently have laws restricting nuclear energy, such as Austria. Implications for Uranium Enrichment A fourfold expansion of nuclear energy would entail significant new production requirements for uranium enrichment as shown in Figure 8 and possibly, reprocessing. The MIT study anticipated that 54 states would have reactor capacities that could possibly justify indigenous uranium enrichment. If a capability of 10 GWe is considered the threshold at which indigenous enrichment becomes cost-effective, more than 15 additional states could find it advantageous to engage in uranium enrichment. Figure 9 depicts what the geographic distribution of enrichment capacity might look like, based on the development of 10 GWe or more of reactor capacity. Of course, some states – such as Australia or Kazakhstan – might opt to enrich uranium regardless of domestic nuclear energy capacity, choosing to add value to their own uranium exports. In addition, states may choose to take the path of the UAE, which has formally renounced domestic enrichment and reprocessing in its domestic law, despite aspiring to reach 10 GWe of capacity. Ultimately, these decisions lie very much in the political realm, and can be reversed. Implications for Proliferation Proliferation experts generally fall into two camps – those that do not consider power reactors a cause for proliferation concern but focus on the sensitive aspects of the nuclear fuel cycle and those that are concerned about the entire fuel cycle. Advocates of nuclear energy point out that most states that have developed nuclear weapons have used dedicated production or research reactors rather than power reactors to produce their fissile material [13]; others point to the potential for a state to use peaceful nuclear power to further a clandestine weapons program, either through technology transfer, hiding clandestine activities within a peaceful nuclear fuel cycle or diverting lightly irradiated fuel to be further enriched. Regardless of one’s views on the proliferation risks of power reactors, the recent surge of enthusiasm for nuclear energy poses several proliferation risks. First, recent enthusiasm is not limited just to power reactors. On the enrichment side, President Bush’s 2004 initiative to limit capabilities to current technology holders failed, not just in strategy but also in tactics. For example, Argentina, Canada, and South Africa have all expressed an interest in keeping their enrichment options open. Brazil, which is commissioning a new centrifuge enrichment plant at Resende, will likely produce more low-enriched uranium than is needed for its own consumption by 2015. By and large, these countries do not produce nuclear energy on at scale large enough to make domestic enrichment capability economic. [14] However, they have keen national interests in maintaining their right to enrich. Faced with allied objections to restricting future options, the Bush Administration folded. This is partly the reason for the impasse at the NSG on further detailed criteria restricting enrichment and reprocessing. A perception of the U.S. approach as discriminatory could open the door to further challenges. Even if piecemeal efforts to limit the number of states with uranium-enrichment or spent fuel reprocessing capabilities succeed, these could ultimately further erode the NPT by extending the existence of haves and have-nots from nuclear weapons into the nuclear fuel cycle. In the short term, efforts to limit expansion could slow some states’ implementation of the safeguards-strengthening measures in the 1997 Model Additional Protocol. In the long term, other decisions to strengthen the NPT could be jeopardized. On the reprocessing end, the United States has recently embraced spent fuel reprocessing at home and abroad. From the Global Nuclear Energy Partnership (GNEP) to nuclear cooperation with India, Bush administration policies supported reprocessing. This is a complete reversal from the policies adopted in the mid-1970s not to encourage the use of plutonium in the civilian fuel cycle. A nuclear renaissance that embraces reprocessing as necessary to reduce spent fuel accumulation could result in more plutonium in transit, providing more potential targets for diversion. A renaissance that includes widespread installation of fast reactors would similarly increase targets for diversion. Although GNEP advocates stress that the kind of spent fuel “conditioning” they favor would not result in the separation of plutonium, there are few assurances thus far that new techniques are any more proliferation-resistant than PUREX. As opponents like to point out, no future fuel conditioning technique in the United States will be more proliferation resistant than storing spent fuel. And while most countries are probably interested in having someone else solve the problem either of spent fuel storage or high-level waste storage, no commercial reprocessing service currently will store high-level waste. Neither the United States, nor Russia, nor France has committed to taking back spent fuel under GNEP. A further question is whether the next generation of reactors will be more or less proliferation-resistant than existing reactors. As of December 2002, the Generation IV Forum had not yet adopted a standard methodology for evaluating proliferation resistance and physical protection for the six systems under consideration. In addition, there have been a few reports that India is considering exporting its Pressurized Heavy Water Reactors. India may not be the only state in a second tier of suppliers that might be interested in exporting reactors, injecting some uncertainty into assessments. Beyond the technical realm, there are very real political questions about widespread diffusion of civilian nuclear power. Would new nuclear states would raise proliferation concerns by virtue of their geographic location, the existence of terrorist groups on their soil, or other sources of political instability? Would expanded nuclear infrastructure in Egypt, Jordan, Indonesia, Malaysia, Morocco, Nigeria, Vietnam, and the GCC countries lead their neighbors to worry about and respond to the possibility that these countries will develop weapons programs? The expansion of nuclear power would also have practical consequences for the nuclear nonproliferation regime. Additional facilities will place additional safeguards requirements on IAEA inspectors It is unclear how the IAEA will meet these requirements – will these mean more inspection days or will other approaches be used under the “integrated safeguards” program? Although reactors themselves require relatively few inspection days, there will be significant work in helping prepare new nuclear states for nuclear power programs. Already, the IAEA has conducted workshops on infrastructure requirements, including energy needs and planning considerations; nuclear security and safeguards; physical infrastructure; current and future reactor technology; experience in developing nuclear programs; human resource requirements; and public perceptions. States must also develop their states systems of accounting and control. A nuclear expansion, in particular, that results in more states with bulk-handling facilities (enrichment and reprocessing) could place significant strain on the IAEA and the inspections system. Recent experience suggest that current methods of inspection cannot provide timely detection. The fact that the IAEA’s goals for timely detection are clearly longer than material conversion times – that is, the time it would take for a proliferator to produce finished metal shapes – is a big concern. The largest enrichment and reprocessing plants under safeguards now are under EURATOM safeguards; the IAEA’s role in verifying material balances in those plants is limited by the IAEA-EURATOM agreement. The only experience in safeguarding commercial-scale enrichment and reprocessing plants outside of EURATOM in a non-nuclear-weapon state is in Japan, where incidents with significant material losses have raised questions. British commercial reprocessing at the THORP facility also has produced recurring reports of significant materials losses. Perhaps the largest question about a nuclear expansion is whether or not planned technological developments will outpace nonproliferation initiatives, such as fuel supply assurances and multinational fuel-cycle centers, voluntary export guidelines, and further restrictions within the Nuclear Suppliers Group. Criticism of the U.S. GNEP program had been aimed in part at the aggressive timeline for technology demonstration of advanced reprocessing, in contrast to developments more closely tied to nonproliferation objectives, such as supporting more proliferation-resistant reactors with sealed fuel cores that would limit handling of fuel. Already, efforts to manage expansion of the front and back ends of the fuel cycle, whether nuclear fuel assurances, fuel banks, or fuel leasing projects, have abandoned any concepts of formal restraints in favor of incentives. It is too soon to tell how compelling those incentives will be. Finally, although there is disagreement among experts about the proliferation potential of light water reactors, it is clear that the proliferation potential of a country with no nuclear expertise is lower than that of a country with nuclear power and its associated infrastructure. The current encouraging climate for nuclear energy – new cooperation agreements between France and the UAE, Libya and Algeria, and between the United States and Turkey and Jordan, for a few – suggests that regardless of global climate change concerns, or whether or not a significant expansion occurs, some states in the Middle East will develop nuclear energy. It is not clear whether new nuclear reactors in the Middle East would result in new enrichment or reprocessing plants in the Middle East. In part, much depends on the outcome of negotiations with Iran on its enrichment capabilities. If states clearly renounce making nuclear fuel and allow sufficient wide- ranging inspections to verify such pledges, the proliferation implications could be significantly diminished. The hope is that this can be accomplished with the UAE.

#### Nuclear power is necessary to avoid four degrees warming

Comeau 3-12-20’13

[Steve, a database programmer and a member of Local Motion, a Burlington-based group that promotes people-powered transportation, “Comeau: Nuclear power can be tool in avoiding global warming”, http://vtdigger.org/2013/03/12/comeau-nuclear-power-can-be-tool-in-avoiding-global-warming/]

Nuclear power is used to generate electricity, primarily replacing the use of coal for that purpose. In the two years since the Fukushima-Daiichi nuclear facility disaster hundreds of thousands of people worldwide have died from air pollution related to burning coal. According to the World Health Organization, “Urban outdoor air pollution is estimated to cause 1.3 million deaths worldwide per year.” Much of that pollution can be attributed to coal, which accounts for over 40 percent of electricity generated in the world. Burning coal produces massive amounts of waste products including fly ash, sulfur dioxide, mercury, and other heavy metals. Burning coal is bad for the environment and human health. But the biggest issue with burning coal is that it is the largest contributor of CO2 emissions, and therefore a huge contributor to human-caused global warming. To make progress on reducing CO2 emissions related to global warming, coal needs to stay in the ground. Of course there are many political and economic forces that make this close to impossible, but it can only be done if the electricity produced by coal is replaced. The replacements available for that purpose are natural gas, renewable energy, and nuclear power. These all have issues and risks, but are far cleaner and with fewer health consequences than coal. There are many interesting developments that will allow nuclear power to be safer, produce less waste, and even use up the existing nuclear waste. Bill Gates is promoting a company called TerraPower, developing the Traveling Wave Reactor. Environmentalist Stewart Brand, editor of the Whole Earth Catalog, supports nuclear power and the development of integral fast reactors that use uranium more efficiently and can use waste from other reactors. James Hansen, a leading climate scientist and now an activist, also supports third- and fourth-generation nuclear reactors as a way to avert climate change. The projections from a variety of sources depict that CO2 emissions will decline slowly in the United States and likely continue to increase around the world — so pretty much a “business-as-usual” scenario. A report by PricewaterhouseCoopers, “Too late for two degrees,” shows that in 2001 the world energy related emissions grew by 3 percent. China’s emissions grew by 9.4 percent, but emissions in the United States dropped by 1.9 percent, in part due to a mild winter. The most revealing and useful metric is the CO2 measurements taken at the Mauna Loa Observatory in Hawaii since 1959. Based on the trend of the CO2 measurements over the past 20 years, the atmospheric CO2 level — currently at 396 ppm (parts per million) — will reach 450 ppm in 2034. This is approximately the level of CO2 where the average global temperature will increase by 2 degrees (3.6 degrees F) over the pre-industrial level. Based on the latest climate change science, disruptive climate change is occurring now and will continue to occur with increased warming. That part is certain. What is uncertain is the intensity and timing of the transition to dangerous climate change, the threshold which is thought to be 2 degrees C of warming over the pre-industrial level. According to a report published in November 2012 by the World Bank, titled “Turn Down the Heat — Why a 4℃ Warmer World Must be Avoided,” if the current commitments and pledges for reducing emissions are not fully implemented, warming of 4 degrees C (7.2 degrees F) could occur as early as the 2060s. This level of warming will likely produce enormous environmental harm, as well as social and economic disruption. I encourage everyone to download and read this World Bank report. We need a greater understanding and appreciation of the magnitude of the projected harm that dangerous climate change can cause. People will adapt to climate change, but that adaptation will include migration and displacement that is orders of magnitude greater than that caused by the Fukushima-Daiichi nuclear facility disaster. That adaptation will include the abandonment of large cities flooded by a rising sea and migration from regions parched by drought. The warming and CO2 levels will last for centuries and change the world ecosystems. To postpone or avert the greatest harm from climate change it is necessary to accept the risks and potential harm that come with nuclear power, renewable energy, and natural gas, because the alternative is so much worse. The environmentalist positions against the energy technologies that offer effective solutions for replacement of coal are not helpful. As stated in the World Bank report: “The projected 4℃ warming must not be allowed to occur — the heat must be turned down.”

### Contention Three: Case Outweighs

#### Irrational bodies are built into prolif discourse, where “soft paths” for racism solidify into policy and affirm larger “patterns” that sustain deprivation and abandonment of the developing world – plan rearranges the institutional source of binary, exposing both of the lay of the land and thus revolutionary potential

Gusterson, 2004 [Hugh, People of the Bomb, p 25-27]

The dominant discourse that stabilizes this system of nuclear apartheid in Western ideology is a specialized variant within a broader system of colonial and postcolonial discourse that takes as its essentialist premise a profound Otherness separating Third World from Western countries.17 This inscription of Third World (especially Asian and Middle Eastern) na­tions as ineradicably different from our own has, in a different context, been labeled "Orientalism" by Edward Said. Said argues that orientalist discourse constructs the world in terms of a series of binary oppositions that produce the Orient as the mirror image of the West: where "we" are rational and disciplined, "they" are impulsive and emotional; where "we" are modern and flexible, "they" are slaves to ancient passions and routines; where "we" are honest and compassionate, "they" are treacherous and uncultivated. While the blatantly racist orientalism of the high colonial period has softened, more subtle orientalist ideologies endure in contempo­rary politics. They can be found, as Akhil Gupta has argued, in discourses of economic development that represent Third World nations as child na­tions lagging behind Western nations in a uniform cycle of development or, as Catherine Lutz and Jane Collins suggest, in the imagery of popular magazines such as *National Geographic."* I want to suggest here that an­other variant of contemporary orientalist ideology is also to be found in U.S. national security discourse.Following Anthony Giddens in his *Central Problems in Social Theory*, I define ideology as a way of constructing political ideas, institutions, and behavior that (1) makes the political structures and institutions created by dominant social groups, classes, and nations appear to be naturally given and inescapable rather than socially constructed; (2) presents the interests of elites as if they were universally shared; (3) obscures the connections between different social and political antagonisms so as to inhibit massive, binary confrontations (i.e., revolutionary situations); and (4) legitimates domination. The Western discourse on nuclear proliferation is ideological in all four of these senses: (1) it makes the simultaneous ownership of nu­clear weapons by the major powers and the absence of nuclear weapons in Third World countries seem natural and reasonable while problematizing attempts by such countries as India, Pakistan, and Iraq to acquire these weapons; (2) it presents the security needs of the established nuclear pow­ers as if they were everybody's; (3) it effaces the continuity between Third World countries' nuclear deprivation and other systematic patterns of dep­rivation in the underdeveloped world in order to inhibit a massive north- south confrontation; and (4) it legitimates the nuclear monopoly of the recognized nuclear powers.In the following pages I examine four popular arguments against hori­zontal nuclear proliferation and suggest that all four are ideological and ori­entalist. The arguments are that (1) Third World countries are too poor to afford nuclear weapons; (2) deterrence will be unstable in the Third World; (3) Third World regimes lack the technical maturity to be trusted with nu­clear weapons; and (4) Third World regimes lack the political maturity to be trusted with nuclear weapons. Each of these four arguments could as easily be turned backward and used to delegitimate Western nuclear weapons, as I show in the following commentary. Sometimes, in the specialized literature of defense experts, one finds frank discussion of near accidents, weaknesses, and anomalies in deterrence as it has been practiced by the established nuclear powers, but these admissions tend to be quarantined in specialized discursive spaces where the general public has little access to them and where it is hard to connect them to the broader public discourse on nuclear proliferation." In this chapter I retrieve some of these discussions of flaws in deterrence from their quarantined spaces and juxtapose them with the dominant discourse on the dangers of proliferation in order to destabilize its foundational as­sumption of a secure binary distinction between "the West" and "the Third World." It is my argument that, in the production of this binary distinc­tion, possible fears and ambivalences about Western nuclear weapons are purged and recast as intolerable aspects of the Other. This purging and recasting occurs in a discourse characterized by gaps and silences in its representation of our own nuclear weapons and exaggerations in its repre­sentation of those of the Other. Our discourse on proliferation is a piece of ideological machinery that transforms anxiety-provoking ambiguities into secure dichotomies. I should clarify two points here. First, I am not arguing that there are, finally, no differences between countries in terms of their reliability as custo­dians of nuclear weapons. I am arguing that those differences are complex, ambiguous, and crosscutting in ways that are not captured by a simple bi­nary division between, on the one hand, a few countries that have nuclear weapons and insist they are safe and, on the other hand, those countries that do not have nuclear weapons and are told they cannot safely acquire them. It is my goal here to demonstrate the ways in which this simple binary distinction works as an ideological mechanism to impede a more nuanced and realistic assessment of the polymorphous dangers posed by nuclear weapons in all countries and to obscure recognition of the ways in which our own policies in the West have often exacerbated dangers in the Third World that, far from being simply the problems of the Other, are problems produced by a world system dominated by First World institu­tions and states.

#### Our advocacy is one of negative state action, the aff fiats less imposition on a global scale – the state isn’t always good but policy-knowledge and deliberations are indispensable to the solution to climate change

**Hansen ‘9**, heads the [NASA](http://en.wikipedia.org/wiki/NASA) [Goddard Institute for Space Studies](http://en.wikipedia.org/wiki/Goddard_Institute_for_Space_Studies) and [adjunct professor](http://en.wikipedia.org/wiki/Professors_in_the_United_States#Adjunct_professor) in the Department of Earth and Environmental Sciences at [Columbia University](http://en.wikipedia.org/wiki/Columbia_University) (James, December, Storms of My Grandchildren, xi)

I believe the biggest obstacle to solving global warming is the role of money in politics, the undue sway of special interests. **But the public, and young people in particular, will need to get involved in a major way.** “What?” you say. You already did get involved by working your tail off to help elect President Barack Obama. Sure, I (a registered Independent who has voted for both Republicans and Democrats over the years) voted for change too, and I had moist eyes during his Election Day speech in Chicago. That was and always will be a great day for America. But let me tell you: President Obama does not get it. He and his key advisers are subject to heavy pressures, and so far the approach has been, “Let’s compromise.” **So you still have a hell of a lot of work ahead of you**. You do not have any choice. Your attitude must be “Yes, we can.” I am sorry to say that most of what our politicians are doing on the climate front is greenwashing – their proposals sound good, but they are deceiving you and themselves at the same time. Politicians think that if matters look difficult, compromise is a good approach. **Unfortunately, nature and the laws of physics cannot compromise – they** are what they are**.** Policy decisions on climate change are being deliberated every day by those without full knowledge of the science, and often with intentional misinformation spawned by special interests. This book was written to help rectify the situation. Citizens with a special interest – in their loved ones – need to become familiar with the science, exercise their democratic rights, and pay attention to politicians’ decisions. Otherwise, it seems, short-term special interests will hold sway in capitals around the world – and we are running out of time.

**Put our predictions on a different level – they are based in fact and not politics. Attempts to relegate science as mere opinion empower climate skeptics and cause warming**

**Banning ‘9**, Professor of Communication at the University of Colorado (Elisabeth, “When Poststructural Theory and Contemporary Politics Collide-The Vexed Case of Global Warming”, September)

**This essay critically reads a preeminent public policy debate\*that of global warming\*with a two-fold purpose**. **Because global warming skeptics have used strategies and coercions that lie mostly beneath the radar of public life to manipulate public opinion**, I array some of their extensive efforts to control public information. I offer this array of efforts not just to reveal what has occurred behind the scenes, but also to illustrate that the resources, motives, and authority behind these efforts are anything but symmetrical. Rather, **while there are clearly opposing points that can be reified on a talk show as a two-sided debate, there is an imbalance between conclusions based on scientific conventions, protocols, and inter-subjective agreement, and conclusions based on commercial interests, private profit, and corporate gain.** The debate on global warming exemplifies what has been termed a ‘‘disingenuous’’ or ‘‘pseudo-controversy,’’ 5 in which commercial and political entities labor to generate a perception of widespread debate among a scientific community where instead there is a strong agreement. **The goal of this pseudo-controversy is to keep viable the appearance that there is ongoing debate about global warming and to foster uncertainty amongst US publics.** Those attempting to manipulate the results of science research and the rhetorical impact of scientific findings on global warming to achieve these ends are not limited to the Bush Administration, but include various political action groups, the Republican National Committee, energy industry representatives, and conservative punditry positioned in mainstream media news outlets and elsewhere. To capture a sense of the extent of these efforts in this essay, I synthesize the COGR with other research reports, news accounts, policy statements, letters, and speeches on the topic. **Studies of discrete or ‘‘limited’’ texts are common in interpretive work in rhetoric**, such as presidential actions or speeches, canonical works, or official policy, **but the discursive actions occurring behind these textual scenes often contradict and complicate public and official discourses**; indeed, that is their purpose. **Amassing the evidence provides the grounds for an analysis that addresses the epistemological question of how various publics in the US can know what information to believe in their policy deliberations**, an analysis that discerns the connections between phenomena that are often scrutinized discretely. **My investigation is thus unabashedly normative\*it assumes there is a social imperative to which public discourse should be accountable and ethical warrants to which scholarship must answer**\*and it is informed by Fredric Jameson’s critical stance that eschews aporias and antinomies in favor of a focus on the central contradiction of a ‘‘text,’’ however construed. 6 Both sides in the struggle to define global warming offer factual claims that result in positions that are irreconcilable. Both positions cannot be equally true, and this is the central contradiction on which I focus. **My account implicitly relies on McGee’s notion that rhetorical critics need to construct ‘‘discourses from scraps and pieces of evidence’’ that they amass,** 7 **in order to illustrate the links between discursive and non-discursive practices** (the historical events that become the basis for further discourse), **and to account for the stabilization of beliefs about a historical event** (global warming). **My second purpose is to ask what institutional and discursive conditions have enabled this moment, in which the broad ideals of academic freedom and protocols guiding scientific inquiry appear to hold precarious authority in the public arena, and the knowledge produced by this inquiry is increasingly viewed as political**. **A complex of factors contributes to the difficulty for US publics to know what to believe about global warming or who to hold accountable for changes in policy: The quality of information that US publics have received is certainly key**. **Perhaps a more insidious set of epistemological problems, however, are the assumptions that the debate over global warming is in fact a debate, that all discourse is equally political, and that there are no standards by which to determine what to accept as contingently true.** **Even the most rudimentary rhetorical analysis of the public discourse on global warming would reveal that the interlocutors in this debate are not equally positioned in terms of resources, motives, and authority, nor do they abide by a normative set of deliberative standards for public discourse**. **There** **are two institutional arenas related to this set of epistemological problems to which I pay particular attention**, **the public arena** with its broad array of government, economic, and political operatives; **and the academic arena**\***specifically\*how theoretical discourses on knowledge and truth generated within this arena have been exported to**, if not expropriated in, **public discourse.** **This co-optation of contemporary critical perspectives on knowledge and truth in public discourse deserves particular scrutiny: When commercial interests deploy contemporary critical perspectives on knowledge and truth to obfuscate and mislead publics, they impede interventions designed to restore conditions for public reason in the political realm. Rhetorical critics and critical communication scholars are uniquely positioned to intervene when scientific conclusions relevant to public policy but disadvantageous to private and elite interests are manipulated**. It is not clear, however, how critical scholars of any stripe intervene in order to press this social imperative into service in the public arena, or what might be the moment and manner of critical intervention in pseudo-controversies such as these. As I will show, those like myself who are indebted to poststructuralist 8 theories of knowledge, truth, and power and who want to intervene in contemporary struggles over policy find ourselves positioned awkwardly\*at best\*by these theories and our own standards of disinterestedness. Our capacities as critical rhetorical and communication scholars are not easily translated into practice and when they are, they face the same claims of partisan politics as all discourse. The question of how these capacities might be pressed into service, however, seems worthy of attention.

## 2AC

### K

#### You should evaluate the plan vs. the alternative – anything else moots the 1AC – it was predicated on the resolution as the starting point of the debate – This focus is necessary – Our Hanson ev says that the application of science to policy development is critical to prevent apathy

#### Prior questions fail

Owen 2 [David Owen, Reader of Political Theory at the Univ. of Southampton, Millennium Vol 31 No 3 2002 p. 655-7]

Commenting on the ‘philosophical turn’ in IR, Wæver remarks that ‘[a] frenzy for words like “epistemology” and “ontology” often signals this philosophical turn’, although he goes on to comment that these terms are often used loosely.4 However, loosely deployed or not, it is clear that debates concerning ontology and epistemology play a central role in the contemporary IR theory wars. In one respect, this is unsurprising since it is a characteristic feature of the social sciences that periods of disciplinary disorientation involve recourse to reflection on the philosophical commitments of different theoretical approaches, and there is no doubt that such reflection can play a valuable role in making explicit the commitments that characterise (and help individuate) diverse theoretical positions. Yet, such a philosophical turn is not without its dangers and I will briefly mention three before turning to consider a confusion that has, I will suggest, helped to promote the IR theory wars by motivating this philosophical turn. The first danger with the philosophical turn is that it has an inbuilt tendency to prioritise issues of ontology and epistemology over explanatory and/or interpretive power as if the latter two were merely a simple function of the former. But while the explanatory and/or interpretive power of a theoretical account is not wholly independent of its ontological and/or epistemological commitments (otherwise criticism of these features would not be a criticism that had any value), it is by no means clear that it is, in contrast, wholly dependent on these philosophical commitments. Thus, for example, one need not be sympathetic to rational choice theory to recognise that it can provide powerful accounts of certain kinds of problems, such as the tragedy of the commons in which dilemmas of collective action are foregrounded. It may, of course, be the case that the advocates of rational choice theory cannot give a good account of why this type of theory is powerful in accounting for this class of problems (i.e., how it is that the relevant actors come to exhibit features in these circumstances that approximate the assumptions of rational choice theory) and, if this is the case, it is a philosophical weakness—but this does not undermine the point that, for a certain class of problems, rational choice theory may provide the best account available to us. In other words, while the critical judgement of theoretical accounts in terms of their ontological and/or epistemological sophistication is one kind of critical judgement, it is not the only or even necessarily the most important kind. The second danger run by the philosophical turn is that because prioritisation of ontology and epistemology promotes theory-construction from philosophical first principles, it cultivates a theory-driven rather than problem-driven approach to IR. Paraphrasing Ian Shapiro, the point can be put like this: since it is the case that there is always a plurality of possible true descriptions of a given action, event or phenomenon, the challenge is to decide which is the most apt in terms of getting a perspicuous grip on the action, event or phenomenon in question given the purposes of the inquiry; yet, from this standpoint, ‘theory-driven work is part of a reductionist program’ in that it ‘dictates always opting for the description that calls for the explanation that flows from the preferred model or theory’.5 The justification offered for this strategy rests on the mistaken belief that it is necessary for social science because general explanations are required to characterise the classes of phenomena studied in similar terms. However, as Shapiro points out, this is to misunderstand the enterprise of science since ‘whether there are general explanations for classes of phenomena is a question for social-scientific inquiry, not to be prejudged before conducting that inquiry’.6 Moreover, this strategy easily slips into the promotion of the pursuit of generality over that of empirical validity. The third danger is that the preceding two combine to encourage the formation of a particular image of disciplinary debate in IR—what might be called (only slightly tongue in cheek) ‘the Highlander view’—namely, an image of warring theoretical approaches with each, despite occasional temporary tactical alliances, dedicated to the strategic achievement of sovereignty over the disciplinary field. It encourages this view because the turn to, and prioritisation of, ontology and epistemology stimulates the idea that there can only be one theoretical approach which gets things right, namely, the theoretical approach that gets its ontology and epistemology right. This image feeds back into IR exacerbating the first and second dangers, and so a potentially vicious circle arises.

#### Frame the link debate in terms of the 1AC – Yes we rely on the law and we’ll contest their link arguments but the 1AC is presented as a response to the way the environment is situated in the law right now – the status quo views the non-human as a lesser concern than distinctly human concerns like proliferation – the 1AC reframes the debate which means the perm accesses their internal links

#### Perm do the Plan and embrace your imperative for a political scholarship against humanism – solves best because it actually does something about the status quo

#### Alt fails --- public won’t sign on to a radical paradigm shift --- the perm solves best because it builds the foundation for a transition to an environmentally benign effort --- [this is magnified by their perm answers that say that ANY use of the state is complicit with violence]

Alyson C. Flournoy, Professor, University of Florida, Levin College of Law, Building an Environmental Ethic from the Ground Up, 27 Environs Envtl. L. & Pol'y J. 53, Fall, 2003, LN

Given this assumption, what is the relevance of environmental philosophy? Environmental philosophers are making contributions on many fronts, but the most visible is work that develops coherent theories promoting less destructive relationships with the nonhuman world. When one surveys the literature on environmental philosophy, the most prevalent focus is the challenge to identify a coherent alternative to a human-centered utilitarian theory. n35 Thus the first step most philosophers take is to reject the dominant human-centered utilitarian ethic. This is essential work that may provide alternative ethical frameworks for people who are dissatisfied with the ethics reflected in traditional Western philosophy and our current practices. In other words, **people who already know that they reject the dominant ethic may immediately benefit by the insight into alternative ethics. But the vast majority of citizens** who may **consider themselves sympathetic to environmentalism may not identify** easily **with** these **radically different ethics. So** mainstream **philosophical discourse on environmental ethics may not engage the** American **public** on relevant ethical questions. Philosophical environmental ethics may be so far removed from lay values and worldviews as to **be irrelevant and inaccessible**. **Engaging a broad**er **swath** of the public on the question of what matters is what I call building an ethic from the ground up. This paper suggests that a key step towards such engagement may be the **develop**ment of **a new discourse about environmental values.** Initially, the term environmentalism may have served as an adequate focus for our discourse. It captured and expressed the public desire to embrace a new ethic, new values, and prompted deep thought about our relationship with the environment. But the meaning of the term has been so diluted over time that commentators have noted that it is now on a par with apple pie and motherhood, n36 something most people embrace and only a few view unsympathetically. n37 Today, environmentalism seems to suggest a posture supportive of environmental laws as they exist or with moderate reforms. It may be that environmentalism today [\*69] lacks a core meaning distinct from the dominant human-centered utilitarian ethic. n38 Use of the word "environmentalism" does not lead to thoughtful engagement with the ethical and practical problems that arise under the current dominant ethic. It is a question mark too often used as a period. One might argue that to cure this void, coherent alternative theories are needed and that the theory-building work being done by philosophers is the most urgent need. However, it seems possible that the leap required of people if they are to understand and embrace a coherent environmental ethic is too difficult for most, given current attitudes and the limited public discourse about underlying values. Coherent environmental ethics are compartmentalized as "radical" and rejected, leaving a vast undefined realm of "mainstream" environmentalism. Most people believe themselves concerned about the environment, even though that commitment may be one without well-defined content. To challenge the public's comfortable self image as "environmentally friendly," we may need concepts that are **not so radically removed from utilitarianism** but which **frame the ethical** and practical **shortcomings** of our current ethics as applied to environmental problems. n39 In other words, concepts that show the possibility and value [\*70] of more ecologically enlightened ethics, but which do not require wholesale acceptance of a radically altered worldview, may have value. n40 A. Towards a New Ethical Discourse: Stepping Stones This paper emphasizes the value of an environmental ethics discourse that can reach a wide segment of the public. Concepts that can frame the ethical issues in a more accessible form may help those who are not completely satisfied with the dominant bounded and imperfect, anthropocentric utilitarian ethics embedded in our policies and laws. Therefore, I advocate developing concepts that can serve as points of departure from where the majority is today -- concepts that frame the ethical issues in an accessible form and offer a new direction for those whose ethical impulses diverge from current dominant norms. n41 Such concepts may fill a gap that exists between legal scholars' work that is directed at improving decisionmakers' analytic techniques and philosophers' work to develop coherent ethical theories. Concepts and vocabulary that draw on both philosophy and law may be useful tools that will help members of the public to understand the full implications of current laws in ethical terms, and to identify or envision practices and policies consistent with their evolving individual ethical intuitions. Developing these concepts will require that we broaden the definition of appropriate work for lawyers and philosophers. Philosophers' contribution **cannot be limited** to developing and justifying a coherent alternative completely apart from human-centered utilitarianism. And lawyers' contribution cannot be limited to critiquing current legal standards or decisionmaking techniques. Philosophers must help us to create a discourse that describes ways of valuing the environment that builds on people's current values, and lawyers must analyze the extent to which existing and proposed laws are compatible with these values. Ultimately, such concepts **may prove more radical in practice than ecocentric ethical theories, in that they may enable ethical transformation that would otherwise not occur.** Metaphorically, we can think of such concepts as stepping stones -- ideas that help people to find their way past some of the constraints of [\*71] traditional ethics. Such concepts should focus public attention on the constraints imposed by traditional utilitarian ethics and bring into view the possibility of an ethic that addresses these constraints. These constraints include inadequate capacity to deal with long time horizons, uncertainty, integrated decisionmaking, social equity, and values that are not easily monetized. Stepping stones, unlike a true environmental ethic, may not provide coherent and complete responses to these constraints, but **by making the issues salient for the public**, they may **represent a necessary step in any widespread ethical evolution.** Where an environmental ethic might be described as requiring a leap from current dominant ethics, stepping stones require only a small step. They invite contemplation of change by highlighting the constraints of current ethics, but they do not demand a complete ethical transformation. To be effective, a stepping stone must have broad resonance with the public and provide a context for confronting some of the challenges that any environmental ethic will have to overcome, including long time horizons, scientific uncertainty and the limitations of the dominant economic framework. n42 One objection to the work of developing stepping stones may be that this is not the work of either philosophy or law. Under this view, environmental philosophy should properly focus on developing coherent alternatives to traditional ethics. Enlightened human-centered ethics will never transcend the ethical inadequacies of human-centered ethics and thus are compromised from the start. But **if environmental philosophy** is to take root, if **it is to reach its potential** as both an intellectual and moral tool for people interested in it, **some accessible groundwork must be laid.** n43 Further, the work to identify such concepts [\*72] is not entirely removed from philosophical concerns, but often lies at the boundary between philosophy and law. Some environmental philosophers and legal scholars are already working in this vein. n44 My goal here is to suggest that more common effort on this endeavor is essential. To illustrate the potential value of this approach, I explore one concept -- **sustainability** -- which holds promise as a stepping stone. **If systematically integrated into debates on law and policy** -- not as a legal standard, but **as a concept that frames the ethical questions** that law and policy raise -- it **may enable environmental philosophy to grow from the ground up**. Sustainability is not the only such concept, but it is one that warrants attention for reasons that I explore below.

#### Their climate link misses the boat – we don’t frame nature as a threatening other – rather human actions that have intervened poorly into the environment – their link evidence just says that “we aren’t sure the aff can change that” – our Hanson evidence says this is the status quo but we can reframe that debate by injecting science into public policy discussion

#### Our perspectives aren’t irreconcilable – incorporating conceptions of the oppressed into the law is the only way to produce structural change.

Keith Hirokawa, “Some Pragmatic Observations About Radical Critique in Environmental law,” STANFORD ENVIRONMENTAL LAW JORNAL, 2002, LN.

Pragmatism may prove a useful tool in environmental debates simply because such debates can be characterized as competing, irreconcilable perspectives that suggest conflicts between paradigms. The environmentalist, for instance, may find it "incomprehensible that an applicant may be permitted to construct a shopping mall, a non-water dependent activity, on wetlands." n127 Yet, the property rights activist believes that "loss of freedom goes [\*254] hand-in-hand with loss of property rights." n128 As a result of such deadlocks (or at least what appear to be deadlocks), many commentators find themselves pessimistic and unable to move beyond the polemic. n129 Delgado's nostalgic recounting of the environmental debate prior to adoption of the public trust doctrine is essentially a "what if" story about someone else's victory. n130 Similar frustration exists in Justice Douglas' dissent in Sierra Club v. Morton, n131 as he tried to convince the court to extend standing to natural resource interests before the wilderness disappeared, in the helplessness pervading Rachel Carson's Silent Spring, n132 and in the nihilism felt by students of William Cronon's environmental history courses. n133 The pragmatic lesson to be learned from these losses is to recognize the conflict between the environmentalists' goals and the most appropriate methods of effecting those goals. The challenge is to "find a way 'the law' can be understood to include conceptions of the oppressed as they are coming to be, even if the weight of legal institutions coherently excludes them." n134

#### We solve the impact – Shift the terms of the debate from solely human threats to a wholistic view of how we are harming the environment

#### Double Bind – EITHER humans are morally equal to animals in which exploiting other animals is justified by the laws of nature, OR humans are morally superior in which case their framework is bunk

Neil Schulman 1995 [“The Illogic of Animal Rights”, http://www.pulpless.com/jneil/aniright.html]

If human beings are no different from other animals, thenlike all other animalsit is our nature to kill any other animal which serves the purposes of our survival and well-being, for that is the way of all nature. Therefore, aside from economic concerns such as making sure we don't kill so quickly that we destroy a species and deprive our descendants of prey,human animals can kill members of other animal species for their usefulness to us.It is only if we are not just another animal -- if our nature is distinctly superior to other animals -- that we become subject to ethics at all -- and then those ethics must take into account our nature as masters of the lower animals. We may seek a balance of nature; but "balance" is a concept that only a species as intelligent as humankind could even contemplate. We may choose to temper the purposes to which we put lower animals with empathy and wisdom; butby virtue of our superior nature, we decide... and if those decisions include the consumption of animals for human utilitarian or recreational purposes, then the limits on the uses we put the lower beasts are ones we set according to our individual human consciences. "Animal rights" do not exist in either case.

#### Radical theorizing fails --- incremental legal change better actualizes the goals the alt – their evidence certainly doesn’t say that Reading the 1NC is enough – the aff is the sort of progressive green movement that would be necessary

Keith Hirokawa, L.L.M., Northwestern School of Law of Lewis & Clark College; J.D., University of Connecticut, Some Pragmatic Observations About Radical Critique In Environmental Law, 21 Stan. Envtl. L.J. 225, June, 2002, LN

Changes in each instance create entirely new contexts in which more (or less) progressive arguments find a hold. Every time a change occurs, even if it is incremental or ostensibly seems benign, the change creates a new context within which an entirely new set of possibilities will arise. n230 The pragmatist therefore evaluates progress by the distance a new idea causes practices to move away from past practices and paradigms. The difference between the pragmatic version of progress and the Kuhnian version is one only of degree. In the end, the results of both versions of progress are the same - we look back at the change and realize that earlier ideas do not make sense anymore. The effectiveness of the pragmatic approach lies in the simple realization that, in adopting an innovative approach to a legal question, courts will find comfort in adopting what appears to be an incremental change, rather than a radical paradigmatic shift**. In** [\*278] **contrast to radical theorists** that deny the existence of progress because of a failure to immediately reach the radical goals of alternative paradigms, the pragmatist recognizes that a **series of incremental changes eventually add up**. Environmental pragmatism enables environmentalists to seek **achievable gains** by focusing on minor improvements in the law that **incrementally close the gap** between the values that pre-existed current environmental law and the alternative paradigms of environmental protection. Hence, the pragmatic view contests the main thrust of Delgado's argument - that the adoption of the public trust doctrine effectively stunted hopes for progress in environmental law. An idea might be completely foreclosed from the legal arena due only to the character of the idea itself; an idea that cannot be integrated into an existing body of law will not be well received. Accordingly, Delgado's invitation to **critical** **environmental theory can emphatically be rejected**. **Innovative legal theories of environmental protection,** such as the public trust doctrine, **have altered our conception of the environment** and hence **made law more amenable to the radical theories of environmental protection.**

#### Humanism is inescapable – and giving up on it dooms the planet to extinction

Davies 97

(Tony, Professor of English at Birmignham. Humanism. 130)

So there will not after all be, nor indeed could there be, any tidy definitions. **The several humanisms** – the civic humanism of the quattrocento Italian city-states, the Protestant humanism of sixteenth century northern Europe, the rationalistic humanism that attended at the revolutions of enlightened modernity, and the romantic and positivistic humanisms through which the European bourgeoisies established their hegemony over it, the revolutionary humanism that shook the world and the liberal humanism that sought to tame it, the humanism of the Nazis and the humanism of their victims and opponents, the antihumanist humanism of Heidegger and the humanist antihumanism of Foucault and Althusser – **are not reducible to one, or even to a single line or pattern**. Each has its distinctive historical curve, its particular discursive poetics, its own problematic scansion of the human. Each seeks, as all discourses must, to impose its own answer to the question of ‘which is to be master’. Meanwhile, **the problem of humanism remains, for the present, an inescapable horizon within which all attempts to think about the ways in which human being have, do, might live together in and on the world are contained**. Not that the actual humanisms described here necessarily provide a model, or even a useful history, least of all for those very numerous people, and peoples, for whom they have been alien and oppressive. Some, at least, offer a grim warning. Certainly it should no longer be possible to formulate phrases like ‘the destiny of man’ or ‘the triumph of human reason’ without an instant consciousness of the folly and brutality they drag behind them. **All humanisms, until now, have been imperial**. They speak of the human in the accents and the interests of a class, a sex, a ‘race’. **Their embrace suffocates those whom it does not ignore**. The first humanists scripted the tyranny of Borgias, Medicis and Tudors. Later humanisms dreamed of freedom and celebrated Frederick II, Bonaparte, Bismarck, Stalin. The liberators of colonial America, like the Greek and Roman thinkers they emulated, owned slaves. **At various times, not excluding the present, the circuit of the human has excluded women, those who do not speak Greek or Latin or English, those whose complexions are not pink, children, Jews. It is almost impossible to think of a crime that has not been committed in the name of humanity. At the same time, though it is clear that the master narrative of transcendental Man has outlasted its usefulness, it would be unwise simply to abandon the ground occupied by the historical humanisms. For one thing, some variety of humanism remains, on many occasions, the only available alternative to bigotry and persecution.** **The freedom to speak and write, to organize and campaign in defence of individual or collective interests, to protest and disobey: all these, and the prospect of a world in which they will be secured, can only be articulated in humanist terms. It is true that** the Baconian ‘Knowledge of Causes, and Secrett Motions of Things’, harnessed to an **overweening rationality** and an unbridled technological will to power, **has enlarged the bounds** of human empire **to the point of endangering the survival of the** violated **planet** on which we live. **But how, if not by mobilizing collective resources of human understanding and responsibility of ‘enlightened self-interest’ even, can that danger be turned aside?**

### Risk

#### The affirmative is a move away from this sort of risk analysis – Counter-Prolif decisions are based around false internal link claims like the domino effect and assumptions that nuclear power = nuclear weapons – Their Leep evidence proves this argument

#### K doesn’t solve the case – doesn’t change the way we debate non-prolif and nuclear power – Our hanson evidence answers their Boggs impact and says that public engagement is low now and the aff solves

#### Only apocalyptic narrative solves – uniquely key to activism

Veldman 12 – doctoral candidate in the Religion and Nature program at the University of Florida (Robin Globus, “Narrating the Environmental Apocalypse”, Volume 17, Number 1, Spring 2012, Ethics & the Environment, online, MCR)

All this is not to say that apocalypticism directly or inevitably causes activism, or that believing catastrophe is imminent is the only reason people become activists. However, it is to say that activism and apocalypticism are associated for some people, and that this association is not arbitrary, for there is something uniquely powerful and compelling about the apocalyptic narrative. Plenty of people will hear it and ignore it, or find it implausible, or simply decide that if the situation really is so dire there is nothing they can do to prevent it from continuing to deteriorate. Yet to focus only on the ability of apocalyptic rhetoric to induce apathy, indifference or reactance is to ignore the evidence that it also fuels quite the opposite—grave concern, activism, and sometimes even outrage. It is also to ignore the movement’s history. From Silent Spring (Carson [1962] 2002) to The Limits to Growth (Meadows et al 1972) to The End of Nature (McKibben 1989), apocalyptic arguments have held a prominent place within environmental literature, topping best-seller lists and spreading the message far and wide that protecting the environment should be a societal priority. Thus, while it is not a style of argument that will be effective in convincing everyone to commit to the environmental cause (see Feinberg and Willer 2011), there does appear to be a close relationship between apocalyptic belief and activism among a certain minority. The next section explores the implications of that relationship further. [End Page 8]

#### Only our specific rhetoric solves

Stepp, 11/5/2012 (Matthew, Contributor and Senior Policy Analyst of the D.C.-based think tank the Information Technology and Innovation Foundation, “Climate Hawks and 'Reverse Tribalism': How Our Policy Choices Are Fueling Climate Inaction”, Forbes, http://www.forbes.com/sites/matthewstepp/2012/11/05/climate-hawks-and-reverse-tribalism-how-are-policy-choices-are-fueling-climate-inaction/)

A self-aware and important discussion has emerged among climate advocates on ‘reverse tribalism’: the process by which some within the climate community scold climate hawks for making exaggerated claims about climate change and extreme weather (see Hurricane Sandy). As Grist writer Dave Roberts puts it, these ‘climate scolds’ believe they, “are saving the [climate hawk] activists from themselves,” by keeping them within the bounds of peer-reviewed science and not allowing their alarming message to be used against them to create climate denial and spurn policy action.¶ **But this process** of reverse tribalism **exists** in the first place **because climate advocates are supporting the wrong policy choices**. In other words, reverse tribalism isn’t a communications issue, it’s a policy issue and it’s at the heart of solving climate change.¶ On paper, making the connection between specific extreme weather events like Hurricane Sandy and climate change is seen as a communications strategy. It’s a way for climate hawks (and I consider myself one) to convey a visceral sense of what climate change means and even feels like. If Americans connect the images of flooded subways, long gas station lines, and washed away neighborhoods to human-driven climate change, then they’re more likely to support climate policy.¶ For communicators like Roberts, it’s the best way to get their point across. And I couldn’t agree more that climate change is an urgent, society-threatening problem that requires aggressive attention over many decades.¶ The problem is that making the extreme weather-climate change connection isn’t working, reverse tribalism or not. It didn’t work after Hurricane Katrina. Or after another year of historic droughts and wildfires. And it probably won’t work after Hurricane Sandy.¶ Sure, Sandy’s devastating impacts on New Jersey and New York are helping spark a long overdue discussion on climate change within the parameters of the Presidential election (if we count NYC Mayor Michael Bloomberg’s endorsement of President Obama on climate grounds as a national discussion), but this shows the limits of it as a communications strategy. Policy elites will discuss climate change, reporters will challenge politicos with climate questions, and cover stories will be written, but more likely than not anything actionable will come from it. I am not suggesting the discussion of climate change isn’t important, but don’t expect Hurricane Sandy to be the proverbial foot to the policymakers backside.¶ **Jarring images of extreme weather aren’t sparking action because ‘climate scolds’ are muddying the messaging.** No, as I wrote in Sunday’s Washington Post the images aren’t sparking action because the policy options most climate advocates and environmentalists are selling the public are bankrupt:¶ “Many environmentalists argue that the best way to address climate change is for Americans to change their lifestyles and make sacrifices for the good of the planet. Americans are told they must consume less, waste less and spend more to buy clean energy. While David Brooks’s “Bourgeois Bohemians” may be able to retrofit their homes with solar panels and drive Chevy Volts, most of us can’t.”¶ Shifting from using fossil fuels to clean energy isn’t an obvious or easy economic choice for most Americans. Clean energy technologies like wind, solar, nuclear, and electric vehicles are more expensive than carbon-intensive alternatives and suffer from limited performance and intermittency problems. As a result, the dominant climate policies emphasized by advocates and environmentalists are like selling nothing more than a bill of goods. Preferred government mandates like Clean Energy Standards or regulatory schemes like cap-and-trade will raise energy prices. In absence of mandates, significant tax-payer subsidies are required to spur even modest clean energy deployment. As I put it in the same piece in the Post, climate change policy has:¶ “…become a hair shirt that Americans are expected to wear for the ‘good of the planet.’ Middle America has long been told what not to do: not to buy incandescent light bulbs, drive gas-guzzling cars and trucks, or use dirty energy.”¶ If Americans were offered clean energy options that were affordable and better than gasoline, coal, and natural gas, much of the derision towards clean energy would go away. Only then would mandates accelerate the deployment of cheap, clean energy rather than force more expensive clean energy technologies on the market. Only then would long-term subsidies not be needed for the clean energy industry to simply survive. And the need to constantly harp on every extreme weather event as one more reason for Americans to sacrifice for the public good becomes less of an issue, as does reverse tribalism.¶ To remove these cost and technology performance barriers – and therefore the major barrier to mitigating climate change – climate advocates should be discussing how best to support clean energy innovation to develop cheaper, better clean energy options. It’s clear that we can’t put the deployment cart before the development horse without feeding the very derision that climate advocates hope to overcome by connecting extreme weather to climate change. It’s an endless positive feedback loop and a vicious one at that.¶ Many fellow climate hawks will respond by saying that I have it all wrong. We just need better messaging. The aforementioned ‘climate scolds’ need to back off the reverse tribalism. Or even more wonky, I shouldn’t bash deployment policies to elevate clean energy innovation – it’s not an either/or proposition. By which they really mean “clean energy R&D is okay, but what is really important is deploying the clean tech we have today.”¶ But the reality is that clean energy is not ready for prime time and all the deployment in the world won’t make it so. One hundred more lithium ion car battery factories won’t get us batteries that cost $100/kWh and have 5 times more storage capacity. Only R&D-based innovation will get us that. The same is true with other key clean energy technologies. Most climate advocates have it wrong by overwhelmingly emphasizing deployment.¶ What we need today – and what Americans would get behind as ‘climate policy’ – is an aggressive clean energy innovation strategy aimed at developing cheaper and better technology options. Smarter deployment policies may be needed down the road to scale better technologies, but they would come with less baggage than the blunt deployment policies used today. Climate advocates and environmentalists need to forget about messaging and start innovating.

#### Their Weart evidence misses the boat – only the plan solves

Ted Nordhaus 11, chairman – Breakthrough Instiute, and Michael Shellenberger, president – Breakthrough Institute, MA cultural anthropology – University of California, Santa Cruz, 2-25, http://thebreakthrough.org/archive/the\_long\_death\_of\_environmenta)

Tenth, we are going to have to get over our suspicion of technology, especially nuclear power. There is no credible path to reducing global carbon emissions without an enormous expansion of nuclear power. It is the only low carbon technology we have today with the demonstrated capability to generate large quantities of centrally generated electrtic power. It is the low carbon of technology of choice for much of the rest of the world. Even uber-green nations, like Germany and Sweden, have reversed plans to phase out nuclear power as they have begun to reconcile their energy needs with their climate commitments. Eleventh, we will need to embrace again the role of the state as a direct provider of public goods. The modern environmental movement, borne of the new left rejection of social authority of all sorts, has embraced the notion of state regulation and even creation of private markets while largely rejecting the generative role of the state. In the modern environmental imagination, government promotion of technology - whether nuclear power, the green revolution, synfuels, or ethanol - almost always ends badly. Never mind that virtually the entire history of American industrialization and technological innovation is the story of government investments in the development and commercialization of new technologies. Think of a transformative technology over the last century - computers, the Internet, pharmaceutical drugs, jet turbines, cellular telephones, nuclear power - and what you will find is government investing in those technologies at a scale that private firms simply cannot replicate. Twelveth, big is beautiful. The rising economies of the developing world will continue to develop whether we want them to or not. The solution to the ecological crises wrought by modernity, technology, and progress will be more modernity, technology, and progress. The solutions to the ecological challenges faced by a planet of 6 billion going on 9 billion will not be decentralized energy technologies like solar panels, small scale organic agriculture, and a drawing of unenforceable boundaries around what remains of our ecological inheritance, be it the rainforests of the Amazon or the chemical composition of the atmosphere. Rather, these solutions will be: large central station power technologies that can meet the energy needs of billions of people increasingly living in the dense mega-cities of the global south without emitting carbon dioxide, further intensification of industrial scale agriculture to meet the nutritional needs of a population that is not only growing but eating higher up the food chain, and a whole suite of new agricultural, desalinization and other technologies for gardening planet Earth that might allow us not only to pull back from forests and other threatened ecosystems but also to create new ones. The New Ecological Politics The great ecological challenges that our generation faces demands an ecological politics that is generative, not restrictive. An ecological politics capable of addressing global warming will require us to reexamine virtually every prominent strand of post-war green ideology. From Paul Erlich's warnings of a population bomb to The Club of Rome's "Limits to Growth," contemporary ecological politics have consistently embraced green Malthusianism despite the fact that the Malthusian premise has persistently failed for the better part of three centuries. Indeed, the green revolution was exponentially increasing agricultural yields at the very moment that Erlich was predicting mass starvation and the serial predictions of peak oil and various others resource collapses that have followed have continue to fail. This does not mean that Malthusian outcomes are impossible, but neither are they inevitable. We do have a choice in the matter, but it is not the choice that greens have long imagined. The choice that humanity faces is not whether to constrain our growth, development, and aspirations or die. It is whether we will continue to innovate and accelerate technological progress in order to thrive. Human technology and ingenuity have repeatedly confounded Malthusian predictions yet green ideology continues to cast a suspect eye towards the very technologies that have allowed us to avoid resource and ecological catastrophes. But such solutions will require environmentalists to abandon the "small is beautiful" ethic that has also characterized environmental thought since the 1960's. We, the most secure, affluent, and thoroughly modern human beings to have ever lived upon the planet, must abandon both the dark, zero-sum Malthusian visions and the idealized and nostalgic fantasies for a simpler, more bucolic past in which humans lived in harmony with Nature.

#### Our aff is not nuclear optimism- it’s carefully reasoned tech based on science and checked by pessimistic engineers

Adams ‘10 (Technological Realism Should Replace Optimism, Pro-nuclear advocate with small nuclear plant operating and design experience. Former submarine Engineer Officer, http://atomicinsights.com/2010/05/technological-realism-should-replace-optimism.html)

As a “served engineer” on a nuclear powered submarine, I learned a long time ago that things go wrong, even with the very best technology. The recognition of inevitable “problems” should not deter technical development and should not make people afraid to develop new products and services, but it should add a healthy dose of humility backed up by continuous efforts to prepare for the worst. My experiences have taught me to be uncomfortable with any proclamation of inevitable progress. I have worked on IT projects, been a full participant in the digital revolution, operated a custom plastics manufacturing company, and watched the nuclear industry work to regain respectability after some serious missteps in its early development history. Progress is hard work and there are often failures that reset the development cycle just as it seems ready to take off. Too many technology observers and pundits point to Moore’s Law as some kind of a general rule for technical developments. [Moore’s Law is a very particular pronouncement](ftp://download.intel.com/museum/Moores_Law/Video-Transcripts/Excepts_A_Conversation_with_Gordon_Moore.pdf) – in 1965, Gordon Moore recognized that there was a recognizable path forward that would allow manufacturers to double the number of transistors that could be inexpensively placed on a chip every year for the next ten years and he recognized that he could apply that law to the 15-20 years of chip development that had already happened. He modified his prediction in 1975 to increase the doubling time to two years instead of one. He predicted that the implementation of that path would allow an increasing quantity of processing power, assuming that it would be possible to keep all of the transistors firing at the same rate as before. Moore’s Law does not apply to software development, to steel making, to underwater sensors, to remote manipulators, to wind energy collection systems, or to the rate of IP data transmission using satellite networks. It is not even infinitely applicable to semiconductor based processors – there are physical limits to the size of transistors and connecting wires that will eventually provide an asymptote that levels out the growth of processing power. I have never had much [“faith” in technology](http://www.nytimes.com/2010/05/30/weekinreview/30rosenthal.html). I like technology. I use lots of technology; my children have occasionally called me “Inspector Gadget” because of all of the tools (my wife and children sometimes call them “toys”) I have accumulated over the years. However, I understand the limits of the technology that I use. I read the manuals, heed the warnings, plan for failure, and worry about the potential consequences of inappropriately using technical devices. I know that no technology can overcome physical barriers; nothing I or anyone else can do will provide power from the wind when it is not blowing and nothing that I or anyone else can invent will enable chemical combustion to provide reliable heat energy without both a source of oxygen and a place to dump the waste products. Nothing that I or anyone else can invent will enable oil extraction from a dry well. I also know that not everything that breaks can be fixed, even if there is an unlimited amount of time and money. Some breaks and fissures can never be welded shut or forced to heal. This is where I believe that humble engineers and technicians who are not driven by sales numbers have a huge role to play. Their (our) natural pessimism can help to reduce the consequences of always listening to the optimists, the people who say “damn the torpedoes”, “failure is not an option”, or “whatever it takes”. Failure is always possible. Before stretching limits it is important to recognize the consequences of the failure to determine if they are acceptable. If the reasonably predictable “worst possible event” results in consequences that cannot be accepted, the prudent course of action is to avoid the action in the first place. I place deepwater drilling for oil and gas into that category. It is pretty obvious that the possible consequences are unacceptable and that technological development has not yet found a way to mitigate those consequences. I am not sure what the limits of “deepwater” should be, but it is apparent that 5,000 feet is beyond the limit. I do not place operating nuclear energy production facilities in that category. However, there are very definitely some kinds of nuclear plants – like very large graphite-moderated, water-cooled reactors operated by people who override safety systems and ignore warning indications – that have proven that they can cause consequences that are not acceptable. The real value comes in determining what the reasonably predictable consequences might be and what failure modes are reasonable to assume. For people who have no firm foundation in real world mechanics, chemistry and physics**, it is possible to spin all kinds of scary scenarios that depend on a series of impossible events**. (Note: Just because I believe that there is always something that can go wrong, I do not believe that all things are possible.) My prescription for progress is not “faith” in engineers or technologists. It is for people to approach challenges with knowledge, a questioning attitude**,** humilityand a willingness to expend the resources necessary to operate safely. A thirst for maximizing short term profits or an attitude of blind optimism are both incompatible with performing difficult tasks in potentially dangerous environments.

**Perm do the plan and include a moment of dissensus – solve the links because it allows for self-reflexive analysis that solves their risk calculus arguments**

#### Affect is not implicated in risk perception- their studies are not precise in language and make the slippery slope fallacy.  Risk perception prioritizes bad consequences above emotion.

LENNART SJO ̈ BERG, Centre for Risk Research, Stockholm School of Economics, Sweden  March 2006 Journal of Risk Research Vol. 9, No. 2, 101–108,

Two conclusions can be drawn from the argument put forward here. First, empirical data do not support a strong link between emotion and perceived risk, in the main sense of the word emotion and in the sense it is used in psychological emotion research. Second, while there is evidence for a relationship between liking and risk perception, this is not evidence for a link between emotion and risk perception. Liking is not emotion. The way emotions are ‘‘proven’’ to be a factor in risk perception is thus by a sort of terminological ‘‘slippery slope’’ involving shifting meanings of terms. Liking is a factor in risk perception, and one of the meanings of liking is affect. Hence, affect is said to be implicated in risk perception, and one of the meanings of affect is emotion. Conclusion: emotion is important in risk perception! Liking is a common way of operationalizing attitude, and attitude has been found to be an important driving factor behind perceived risk (Sjo ̈ berg, 1992, 2000b). It is sometimes argued that this relationship is artefactual, or merely semantic. However, that argument is illogical and unjustified. Liking is surely different in meaning from perceived risk and their relationship is purely empirical. In conclusion, the belief that risk perception is contaminated by emotion has just been growing stronger over the years, yet it is unjustified. It can be used for dismissing the public’s risk concern as uninformed and—yes— ‘‘emotional.’’ The very fact that an extensive discussion, filling an entire issue of the journal Reliability Engineering and Systems Safety, of whether the public’s risk perception should have an influence on policy failed to mention the simple argument that it must be so in a democratic society (Sjo ̈ berg, 2001a, 2001b), demonstrates the need for a critical analysis of and reflection on the received message in risk perception research.

#### They paint the aff as being fear politics but our Cost-benefit analysis is critical mediating misplaced forms of fear based affect.

George F. Loewenstein et al 2001, “Risk as Feelings,” Psychological Bulletin, Vol. 127, No. 2, google it

The divergence between the emotional reactions of the public to risks and professionals' appraisals of risks creates a significant dilemma for policy makers. On the one hand, many policy makers would like to be responsive to public.: attitudes and opinions., On the other hand, there is a strong rationale f()r basing public policy on the best scientific assessments of risk severity Sunstein (in press) justified cost-benetit analysis precisely on the basis that it provides an impartial assessmt!nt of' programs that are resistant to the influence of public fears, He noted Ihat governments allocate the limited resources for risk mitigation in an inefficient fashion in part because they are responsive to \;\y judgml!nts about !he magnitude of risks. Sumltein then citt!d result!i trom diverse Hnes of research showing that a government that could insulate itself from such misinformed judgments could save tens of' thousands of lives and tens of billions of dollats annually. Consistent with the riskas~ feelings hypothesis, Sunstein attributed the public's misinformed judgments in part to emotional intluences: Risk-related objections can be a product not so much of thinking as of intense emotions. often produced by extremely vivid images of what might go wrong The role of cost-benefit analysis is straightforward here Just as the Senate was designed to have a "cooling effect'on the passions of the House of Representatives, so cost-beoefit analysis might ensure that policy is driven not by hysteria or alarm, but by a full appreciation of the effects of relevant risks and their control. (p. 16) Sunstein argued further that CQst- benefit analysis could not only act as a check on unwarranted fears (e.g .. Alar), but could also serve to introduce regulation of risks that are objectively threatening but that do not elicit visceral reactions in the populace (e g .• lead in gasoline and radon in homes)

#### Even if they win that affect is a key motivator for action, it is both insufficient and ineffective in decisionmaking. Prefer our evidence, it is comparative that you cannot exclude focusing on the risk of the advantage

**Marx et al 2007** [Sabine M., “Communication and mental processes: Experiential and analytic processing of uncertain climate information,” Global Environmental Change 17, google it

 Yet, while the engagement of experience-based, affective decision-making can make risk communications more salient and motivate behavior, experiential processing is also subject to its own biases, limitations and distortions, such as the finite pool of worry and single action bias. Experiential processing works best with easily imaginable, emotionally laden material, yet many aspects of climate variability and change are relatively abstract and require a certain level of analytical understanding (e.g., long-term trends in mean temperatures or precipitation). Ideally, communication of climate forecasts should encourage the interactive engagement of both analytic and experiential processing systems in the course of making concrete decisions about climate, ranging from individual choices about what crops to plant in a particular season to broad social choices about how to mitigate or adapt to global climate change. One way to facilitate this interaction is through group and participatory decision-making. As the Uganda example suggests, group processes allow individuals with a range of knowledge, skills and personal experience to share diverse information and perspectives and work together on a problem. Ideally, groups should include at least one member trained to understand statistical forecast information to ensure that all sources of information—both experiential and analytic—are considered as part of the decision-making process. Communications to groups should also try to translate statistical information into formats readily understood in the language, personal and cultural experience of group members. In a somewhat iterative or cyclical process, the shared concrete information can then be re-abstracted to an analytic level that leads to action. Risk and uncertainty are inherent dimensions of all climate forecasts and related decisions. Analytic products like trend analysis, forecast probabilities, and ranges of uncertainty ought to be valuable contributions to stakeholder decision-making. Yet decision makers also listen to the inner and communal voices of personal and collective experience, affect and emotion, and cultural values. Both systems—analytic and experiential—should be considered in the design of climate forecasts and risk communications. If not, many analytic products will fall on deaf ears as decision makers continue to rely heavily on personal experience and affective cues to make plans for an uncertain future. The challenge is to find innovative and creative ways to engage both systems in the process of individual and group decision-making.

#### High magnitude impacts like extinction must be avoided regardless of probability, some impacts should not be suspect to risk evaluation—“we just can’t take the chance”

Rescher 1983(Nicholas. University Professor of Philosophy at the University of Pittsburg. Chairman of the Philosophy Department. Director of the Center for Philosophy of Science. Honorary degrees from 8 universities on 3 continents. Doctorate in Philosophy from Princeton. “Risk: A Philosophical Introduction to the theory of Risk Evaluation and Management”.. University Press of America. P 64-65)

A disparity of risks arises when there is so serious an imbalance among alternative eventuations – so great a difference in the relative size of the prospective negativities at issue – that one alternative can be viewed as simply ineligible relative to another, quite independently of considerations of probabilistic detail. The prospect of such a negativity is simply unacceptable relative to the gains or losses otherwise operative in the situation, without reference to any “balance of probabilities.” Thus *no matter what the balance of probabilities, the “reasonable man” would not risk loss of life or limb to avert the prospect of some trivial inconvenience.* Nor would he ever risk utter impoverishment to avert the possible loss of a few cents – at any rate as long as we are not dealing with probabilities that are “effectively zero.” The prospective damage of the one alternative is too great in relation to the potential loss of the other, regardless of the odds. One “just can’t take the chance.” In this light consider a choice-situation of the form set out in Figure 1. In a situation of this sort, the possible losses at issue can prove to be of altogether different orders. The negativity of Y can be so large relative to that of X that they are simply not in the same league – one would rationally opt for one and shun the other regardless of how the probabilities of *x* and *y* are adjusted. In the conditions at issue, the *Y* risking hazard is simply unacceptable. It is unjustified as well as unrealistic to take the stance that all negativities are essentially comparable and to hold that one can always be balanced off against another by such probabilistic manipulations.

**No impact – scenario planning has no downside, just an upside in the instance we’re right, at best they will win that we don’t solve our impacts which is a solvency arg not an impact or theory argument**