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### Plan

#### Plan: The United States federal government should substantially increase prohibitions on private sector conduct that is more restrictive of competition than reasonably necessary to enable creation of information technology standards.

### 1AC---Innovation ADV

#### Advantage 1 is Innovation:

#### Current standard setting organization and FRAND enforcement is failing now

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I. Standard Setting and the Competitive Process

The fundamental economics in the information technology sector, driven by network effects, implies that there is enormous value associated with establishing compatibility standards. Popular standards include the mobile broadband standards used in cell phones, which are established by the 3rd Generation Partnership Project (3GPP), and the Wi-Fi technology for wireless local area networks, which is enabled by the 802.11 standard established by the Institute of Electrical and Electronics Engineers (IEEE).4

There are many SSOs, and their rules and procedures differ considerably. In addition to IEEE, leading SSOs include the International Organization for Standardization (ISO), the International Telecommunication Union (ITU), the European Telecommunications Standards Institute (ETSI), the Internet Engineering Task Force (IETF), and the World Wide Web Consortium (W3C).5 SSOs generally establish standards by holding a series of committee meetings among industry participants. These meetings culminate in a vote on a technical specification that describes what features or attributes a product must have in order to comply with the standard. Most SSOs are open to all industry participants and seek to operate on a consensus basis, applying certain voting rules. SSOs do not normally engage in patent licensing, nor do they specify how patent royalties will be divided up among patent holders. They leave that to their members, which in some cases form patent pools to address these issues.6

SSOs adopt specific policies relating to intellectual property rights (IPRs).7 These IPR policies are generally intended to enable the SEP holders to obtain reasonable royalties for licensing their patents, while prohibiting them from charging excessive royalties after other industry participants have committed to the standard. At that point, firms committed to implementing the standard— which we call “implementers”—would find it very costly to avoid using the patented technology. For this purpose, most SSOs require SEP owners to license their SEPs on FRAND terms.8

FRAND policies are especially necessary because negotiations between SEP holders and implementers generally take place only after the implementers have used and infringed the technologies claimed by the SEPs. Standards involving information and communications technology can involve hundreds or even thousands of SEPs, many with uncertain boundaries for infringement. In addition, a time lag exists between patent application and patent issuance. For these and other reasons, it is impractical for implementers to enter into negotiations for patent licenses with all SEP owners prior to the establishment of a standard and to their implementation of it.9

The fact that patent negotiations generally do not take place until after implementers have used and infringed the technologies has several critical implications. First, at the time of negotiation, implementers are locked into the standard and the technologies claimed by the SEPs—that is, the cost to switch to an alternative technology or standard at that point—ex post—is much greater than it was ex ante, before the patented technology was first included in the standard. Ex post, the patent holder is no longer competing to have its technology included in the standard, nor is it competing to have implementers of the standard use its technology. Instead, because the patent holder owns an asset that is essential to the standard, implementers have no choice but to use the patented technology.

If the standard is commercially successful, implementers are willing to pay a much larger royalty for use of the patented technology than they would have paid ex ante, when the SEP holder faced competition from other technologies. In these circumstances, the SEP holder can be said to have obtained monopoly power in the market in which the patented technology is licensed for use in implementing the standard.10

Second, because of lock-in and the implementer’s ongoing infringement, the potential for litigation looms large in licensing negotiations. In effect, the parties are negotiating about how to settle an infringement suit, and that negotiation is heavily influenced by their predictions as to what the court will do if they cannot agree. This situation is not unique to SEPs; it arises frequently when firms are faced with patent infringement claims for products they have independently developed or technologies they have inadvertently infringed. Patent law addresses such instances by specifying that patent holders are entitled to “reasonable royalties,” defined as the royalties that the parties would have negotiated prior to the infringement and thus prior to lock-in.11 Those hypothetical ex ante royalties reflect the market value of the patent license. Notwithstanding the law’s embrace of this principle, however, as a practical matter, patent holders are generally able to recover more than the ex ante value of the patent when litigation occurs after the implementers are locked in. Further, negotiations in the shadow of litigation after lock-in tend to result in royalties in excess of the ex ante or market value of the patented technology.12

Third, the shadow of litigation is particularly problematic in the communications and technology sector, in which products typically include hundreds or thousands of patented technologies. A court-ordered injunction involving such products would deprive the implementer of not only the value of the technology covered by the patent-in-suit, but also the value of the entire product.13 Implementers that are forced to bear the risk of an injunction are thus induced to agree to royalties greater than those that would be appropriate if only the value of the patented technology were at stake. Those royalties systematically provide SEP holders with excessive compensation in comparison with the benchmark of ex ante royalties.

These implications of lock-in and ex post dealings are well-understood: they represent an example of the general concept of lock-in and opportunism developed by Oliver Williamson.14 The Federal Circuit has also recognized the market distortions caused by the inclusion of patented technologies in public standards and the resulting danger of patent holdup involving SEPs.15

For these and other reasons, the SEP holder has ex post monopoly power that, if left unchecked, would enable it to obtain royalties far in excess of the royalties that it could earn in a competitive market.16 To address this common problem and limit ex post opportunism by SEP holders, SSOs typically require participants that own SEPs to make certain FRAND commitments. In particular, by requiring a commitment to license on “fair and reasonable” terms, the FRAND requirement aims to prevent, or at least reduce, the extent of monopoly pricing by SEP holders. And by requiring a commitment to license on “nondiscriminatory” terms, the FRAND requirement can prevent SEP holders from extracting monopoly premiums by selective licensing or, more important, migrating their monopoly power from the FRAND-regulated market to unregulated standard-implementing product markets by licensing to only one or a few implementers or licensing to selected implementers on discriminatorily favorable terms.

#### Holdup is accentuated by FTC v Qualcomm

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Standards can enhance competition and consumer choice, but they also massively inflate the value of patents deemed essential to the standard, and give their owners the power to sue companies that implement the standard for money damages or injunctions to block them from using their SEPs. When standards cover critical features like wireless connectivity, SEP owners wield a huge amount of “hold-up” power because their patents allow them to effectively block access to the standard altogether. That lets them charge unduly large tolls to anyone who wants to implement the standard.

To minimize that risk, standard-setting organizations typically require companies that want their patented technology incorporated into a standard to promise in advance to license their SEPs to others on fair, reasonable, and non-discriminatory (FRAND) terms. But that promise strikes at a key tension between antitrust and patent law: patent owners have no obligation to let anyone use technology their patent covers, but to get those technologies incorporated into standards, patent owners usually have to promise that they will give permission to anyone who wants to implement the standard as long as they pay a reasonable license fee.

Qualcomm is one of the most important and dominant companies in the history of wireless communication standards. It is a multinational conglomerate that has owned patents on every major wireless communication standard since its first CDMA patent in 1985, and it participates in the standard-setting organizations that define those standards. Qualcomm is somewhat unique in that it not only licenses SEPs, but also supplies the modem chips used by a wide range of devices. These include chips that implement wireless communication standards, which lie at the heart of every mobile computing device.

Although Qualcomm promised to license its SEPs (including patents essential to CDMA, 3G, 4G, and 5G) on FRAND terms, its conduct has to many looked unfair, unreasonable, and highly discriminatory. In particular, Qualcomm has drawn scrutiny for bundling tens of thousands of patents together—including many that are not standard-essential—and offering portfolio-only licenses no matter what licensees actually want or need; refusing to sell modem chips to anyone without a SEP license and threatening to withhold chips from companies trying to negotiate different license terms; refusing to license anyone other than original-equipment manufacturers (OEMs); and insisting on royalties calculated as a percentage of the sale price of a handset sold to end users for hundreds of dollars, despite the minimal contribution of any particular patent to the retail value.

In 2017, the U.S. Federal Trade Commission [sued](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used) Qualcomm for violating both sections of the Sherman Antitrust Act by engaging in a number of anticompetitive SEP licensing practices. In May 2019, the U.S. District Court for the Northern District of California agreed with the FTC, identifying numerous instances of Qualcomm’s unlawful, anticompetitive conduct in a comprehensive [233-page opinion](https://www.eff.org/document/ftc-v-qualcomm-district-court-opinion). We were pleased to see the FTC take action and the district court credit the overwhelming evidence that Qualcomm’s conduct is corrosive to market-based competition and threatens to cement Qualcomm’s dominance for years to come.

But this month, a panel of judges from the Court of Appeals for the Ninth Circuit unanimously [overturned](https://www.eff.org/document/ninth-circuit-opinion-ftc-v-qualcomm) the district court’s decision, reasoning that Qualcomm’s conduct was “hypercompetitive” but not “anticompetitive,” and therefore not a violation of antitrust law. To reach that result, the Ninth Circuit made the patent grant more powerful and antitrust law weaker than ever.

According to the Ninth Circuit, patent owners don’t have a duty to let anyone use what their patent covers, and therefore Qualcomm had no duty to license its SEPs to anyone. But that framing requires ignoring the promises Qualcomm made to license its SEPs on reasonable and non-discriminatory terms—promises that courts in this country and around the world have consistently enforced. It also means ignoring antitrust principles like the essential facilities doctrine, which limits the ability of a monopolist with hold-up power over an essential facility (like a port) to shut out rivals. Instead, the Ninth Circuit held rather simplistically that a duty to deal could arise only if the monopolist had provided access, and then reversed its policy.

But even when Qualcomm restricted its licensing policies in critical ways, the Ninth Circuit found reasons to approve those restrictions. For example, Qualcomm stopped licensing its patents to chip manufacturers and started licensing them only to OEMs. This had a major benefit: it let Qualcomm charge a much higher royalty rate based on the high retail price of the end user devices, like smartphones and tablets, that OEMs make and sell. If Qualcomm had continued to license to chip suppliers, its patents would be “exhausted” once the chips were sold to OEMs, extinguishing Qualcomm’s right to assert its patents and control how the chips were used.

Patent exhaustion is a century-old doctrine that protects the rights of consumers to use things they buy without getting the patent owner’s permission again and again. Patent exhaustion is important because it prevents price-gouging, but also because it protects space for innovation by letting people use things they buy freely, including to build innovations of their own. The doctrine thus helps patent law serve its underlying goal—promoting economic growth and innovation. In other words, the doctrine of exhaustion is baked into the patent grant; it is not optional. Nevertheless, the Ninth Circuit wholeheartedly approved of Qualcomm’s efforts to avoid exhaustion—even when that meant cutting off access to previous licensees (chip-makers) in ways that let Qualcomm charge far more in licensing fees than its SEPs could possibly have contributed to the retail value of the final product.

It makes no sense that Qualcomm could contract around a fundamental principle like patent exhaustion, but at the same time did not assume any antitrust duty to deal under these circumstances. Worse, it’s harmful for the economy, innovation, and consumers. Unfortunately, the kind of harm that antitrust law recognizes is limited to harm affecting “competition” or the “competitive process.” Antitrust law, at least as the Ninth Circuit interprets it, doesn’t do nearly enough to address the harm downstream consumers experience when they pay inflated prices for high-tech devices, and miss out on innovation that might have developed from fair, reasonable, and non-discriminatory licensing practices.

We hope the FTC sticks to its guns and asks the Ninth Circuit to go en banc and reconsider this decision. Otherwise, antitrust law will become an even weaker weapon against innovation-stifling conduct in technology markets.

#### Weakened antitrust enforcement emboldens firms to follow Qualcomm’s lead

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While the FRAND process has been highly productive, it is also fragile. Firms are tempted to make commitments at the beginning when the incentive to join is large, but renege on them later when they can profit by doing so. At least in this particular case, private FRAND enforcement had not worked very well. Qualcomm had been able to violate FRAND commitments in order to exclude rivals and obtain higher royalties than FRAND would permit, largely with impunity. Other firms will very likely follow Qualcomm’s lead. If that happens the FRAND system will fall apart, doing irreparable injury to the modern wireless telecommunications network or, at the very least, diminishing the leadership role of the United States in preserving effective network competition.

While governments can be heavily involved in standard set-ting,9 the implementation of technical standards in information technologies is largely the work of private actors. Government involvement is limited mainly to enforcement of contract, intellectual property, or antitrust law. As private actors, those involved in standard setting or compliance are fully subject to the federal antitrust laws.

This Article addresses one question: when is an SSO participant’s violation of a FRAND commitment an antitrust violation, and if it is, of what kind and what are the implications for remedies? It warns against two extremes. One is thinking that any violation of a FRAND commitment is an antitrust violation as well. In the first instance FRAND obligations are contractual, and most breaches of contract do not violate any antitrust law. The other extreme is thinking that, because a FRAND violation is a breach of contract, it cannot also be an antitrust violation. The question of an antitrust violation does not de-pend on whether the conduct breached a particular agreement but rather on whether it caused competitive harm. This can happen because the conduct restrained trade under section 1 of the Sherman Act, was unreasonably exclusionary under section 2 of the Sherman Act, or amounted to an anticompetitive condition or understanding as defined by section 3 of the Clay-ton Act.10 The end goal is to identify practices that harm com-petition, thereby injuring consumers.

The Ninth Circuit’s Qualcomm decision will make antitrust violations in the context of FRAND licensing much more difficult to prove, even in cases where anticompetitive behavior and consumer harm seem clear.11 Indeed, in this case the court itself acknowledged the harm to consumers but appeared to think that they were not entitled to protection.12 If this decision stands, FRAND obligations will to a larger extent have to be settled through private litigation and the federal antitrust enforcement agencies will have a diminished role. Anticompetitive behavior by one firm that is not effectively disciplined will lead others to do the same thing.

#### A trusted and credible system for ICT innovation is critical to rapid tech diffusion and economic growth---absent FRAND, the system will collapse.

Bauer et al. 17, \*Matthias Bauer is Senior Economist at ECIPE; \*Fredrik Erixon is a Swedish economist and writer. He has been the Director of the European Centre for International Political Economy (ECIPE) ever since its start in 2006; (October 2017, “Standard Essential Patents and the Quest for Faster Diffusion of Technology”, https://ecipe.org/publications/standard-essential-patents/)

It is easy to take a pessimistic view about whether the system will break. If the current trend continues, the system is likely to break at some point for the simple reason that companies will not trust it anymore. The series of legal disputes witnessed over the past years – sometimes referred to as the “smartphone patent wars” – has been fodder for a pessimistic reading of “the two tales of SEPs”. While it is common in the business world that disputes over patents and licenses are settled in courts, various SEP disputes have revealed problematic aspects of the SEP market that are different from those disputes that follow the normal stream of business and contracts. Often, the SEP disputes are less concerned about the rights and boundaries of patents, and more about antitrust limits to market behavior: they concern market abusive practices and restrictions to competition as much as they are about intellectual property.

If the SEP system actually does break at some point, the consequences would be felt throughout the economy. SEPs have been a critical part of the ICT revolution. SEPs have allowed for the fast rates of innovation diffusion that the world has witnessed over the past quarter of a century. All the computer and Internet related products and services that people are now dependent upon for their private and professional lives are intricate webs of intellectual property. As many as 250,000 patents can be used to claim ownership of some technical specification or design element in a single smartphone (NYT 2012). A laptop, suggests one calculation, implements more than 250 interoperability standards (Biddle et al. 2010), and the number of SEP holders for 3G and 4G standards grew from 2 in 1994 to 130 in 2013 while the number of SEPs rose from fewer than 150 in 1994 to more than 150,000 in 2013 (Galetovic and Gupta 2016). The standardization-body ETSI has registered more than 150,000 declarations of SEPs from companies, and ETSI is just one of many bodies in the world of ICT standardization. For the 3G standard, the same body has about 24,000 patents that have been declared essential. Now, with the economy yet again on the threshold of big technological change, a trusted and credible system for creators and users of technology to standardize proprietary technology would be a boon for innovation, interoperability and – ultimately – the consumers.

And there are reasons for optimism. Although many of the problems in the SEP regimes need to be addressed, the numbers above indicate that the SEP system is in fact attractive to patent holders and SEP implementers. It is easy to see why: neither holders nor implementers are presented with alternative options that on the face of it would be far more profitable for them. In other words, there simply would not be as many patents declared as essential if both creators and users of technology believed the SEP system worked to their disadvantage or was grossly unfair. While the reality for some companies may be that legal disputes and unpredictability prompt them to find other ways than SEPs to get access to key technologies for their products, it remains the case that most stakeholders have strong economic incentives to maintain a balanced SEP system that is trusted.

First, standard essential patents are an asset for creators of technology because, by becoming essential to a standard, their volumes of sales for technologies that users value rise significantly. As many holders want to raise more revenues for their SEPs and – ideally – have the freedom to contract with buyers on their terms, they can expand their customer base when they agree to sell patented technology in accordance with a set of rules that are designed to prevent SEP holders exploiting the weakness of a customer that has grown dependent on having access to their technology.

Second, SEPs are hugely beneficial also to those that buy the licenses – the implementers or users. Through the SEP system, they can access technologies that are interoperable and work with different products and functionalities – and they can do it under conditions that, if history is a guide, in most cases give them stable and predictable terms of contract. As a consequence, both creators and users can focus on their competitive advantages and profit on the economies of scale and specialization. Downstream firms do not need to develop their own upstream technology and upstream firms do not need to package their technologies in end-customer products in order to make their products valuable.

Third, standard-setting organisations (SSOs) also have a big stake in an SEP system that works well – and, like creators and users of technology, they would stand to lose significantly if the SEP system were to collapse.

Lastly, the biggest beneficiaries are individual consumers – those who buy the end products using FRAND-conditioned SEPs. The advent of SEPs and the rules represented by FRAND have enabled a development of fast technology creation and contributed to the rapid diffusion in ICT goods and ICT-based services. The SEP system has also allowed for new competition, both between existing technologies and brands, and from new ones that have stepped into the market with the ambition to disrupt it, again to the benefit of the consumer. It is difficult to imagine that the ICT and digital development would have been as fast as it has been if SEPs had not been a central feature of the market.

The changing fortunes of companies operating in the cellular and smartphone market would not have been possible if there had not been an SEP system that supported competition. Now that the world economy is on the doorstep of new innovations that are dependent on a great number of input technologies – e.g. the Internet-of-Things, transport connectivity and intelligent vehicles – it is crucially important for the consumer that a balanced and functioning SEP system is maintained and that actors in the system converge towards it – which would ultimately meet their economic interests.

#### ICT innovation is key to post-COVID economic recovery and long-term growth.

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Introduction

As the global economy has entered recession in 2020, triggered by the COVID-19 pandemic, the human casualties, and economic damage are perceived to be very large. Even as the health crisis will gradually become manageable, the impact on economic growth can be long-lasting and the recovery path can take several years. In particular, growth drivers such as the pace of job creation, income generation and investment may take several years to get back to pre-crisis trends. Initially the productivity of those growth drivers may be of less concern as the mantra of ‘we’ll do what it takes to avoid worse’ is predominant in this phase of the crisis.

However, once the recovery gets underway the productive use of resources is key to sustained growth. While we do not ignore the short-term challenges of the economic recovery, our primary focus in this paper is on the productivity puzzle from a long-term perspective. Productivity is driven by technological change and innovation which, in turn, depends on investment in human and physical capital as well as in other ‘missing capitals’ often referred to as intangible assets. Indeed, those investments create a positive feedback effect, as the productivity it generates also helps to make more efficient usage of scarce resources in the future. When properly measured and valued, productivity also provides a critical yardstick to realise a fairer distribution of the gains from economic growth to those who bring the resources to bear. It thereby creates the incentives for people to produce and business to invest helping to drive economic growth and raise living standards.

Unfortunately, in the aftermath of the global financial crisis of 2008/2009, many economies around the world, especially advanced economies, have failed to recharge the economy by powering productivity as the key source of growth in the long term. Indeed the latest update of The Conference Board Total Economy Database (July 2020) points at significant weakening in labor productivity growth in Europe up to 2019 (figure 1a–c). While the United States experienced somewhat faster productivity growth from 2017 to 2019 than the Euro Area and the United Kingdom, it still has not recovered to the rates of productivity growth from before the global financial crisis either.

The slowdown in productivity growth over the past 15 years has been well documented. There are multiple causes including an exhaustion of catch-up potential in emerging markets impacting economies along entire global value chains, and the drag from the global financial crisis because of low demand and weak investment, too low interest rates causing misallocations an overreliance on cheap labor, and failing fiscal policies (Bauer et al., 2020; Cette et al., 2016; Crafts, 2018; Dieppe, 2020; Fernald et al., 2017; Syverson, 2016).1 Technical measurement issues regarding inputs and outputs may have played a role as well.

In our earlier work we have stressed the importance of time lags in the adoption of new technologies, and in particular the complexity in generating productivity growth from the latest round of new digital technologies since the early 2010s, including the move toward mobile, ubiquitous access to broadband, the rise of cloud storage and advances in artificial intelligence (AI) and robotics (van Ark, 2016a, 2016b; van Ark and O’Mahony, 2016; van Ark et al., 2016).

While the first priority for economic recovery from the COVID-19 crisis is to restore jobs, it is important that any employment-intensive growth path does go together with a productivity revival. In this paper, we argue that it is possible to avoid another productivity slowdown. Underneath the aggregate figures, there is evidence pointing toward a possible tipping point at which many advanced economies may expect to see more widespread impacts from the adoption and absorption of digital technology on productivity and GDP growth.

In Section 2 we review the latest literature on the productivity impacts of general purpose technologies (GPTs), including the notion of time lapses through which digital technologies result in faster productivity growth. We also look at patterns by which innovation and productivity effects GPTs emerge across industries and disperse across the economy. We explain why the New Digital Economy (NDE) is especially characterised by long lag effects.

In Section 3 we provide an empirical analysis of productivity growth by industry data to observe whether we can detect a distinct pattern across groups of industries pointing to a structural improvement in recent years. We use a taxonomy on digital intensity by industry which was recently developed by the Organisation for Economic Co-operation and Development (OECD) (Calvino et al., 2018), showing that the most digital-intensive industries have experienced a relatively strong performance in terms of labor productivity growth since 2007 and especially since 2013.

In Section 4 of the paper, we discuss the connection between labor and skills in the digital economy, which we believe provides the key to a productivity revival. We developed a new metric on innovation competencies by occupation on the basis of data from the O\*Net database on occupation-specific descriptors in the United States (Hao et al., 2018). When applied to the United Kingdom, we find that innovation competencies point at stronger productivity effects by industry.

In Section 5 we focus on how productivity has been behaving in the short-term during the COVID-19 recession. In particular, we address the potential trade-offs between traditional pro-cyclical recovery effects and scarring effects the recession leaves, especially on the labor market. We argue that increased adoption and usage of digital technologies during the COVID-19 crisis may create a positive productivity effect. In the final section, Section 6, we will review our hypothesis that a productivity revival could be imminent in the light of the recovery from the COVID-19 crisis. In order not to miss this opportunity again, as happened a decade ago, we argue that a coordinated effort from business and policy is needed, and has to be delivered in such a way that the gains from productivity will be more widespread and such that those who provide the resources for growth are incentivised to deliver them in an efficient way.

2. The productivity paradox of the New Digital Economy

It is well known that General Purpose Technologies (GPTs), defined as new methods of producing and inventing new goods and services which are important enough to have a long-term aggregate impact on the economy, can take a significant amount of time to translate to faster productivity growth at the aggregate level of the economy. This is inherent to the three critical characteristics of a GPT as identified by Bresnahan and Trajtenberg (1995).2

1. Pervasiveness –The GPT should spread to most sectors.

2. Improvement –The GPT should get better over time and, hence, should keep lowering the costs of its users.

3. Innovation spawning –The GPT should make it easier to invent and produce new products or processes.

Historical analysis has focussed on productivity trends in previous technology phases (Bakker et al., 2019; Crafts, 2004). Recent literature has shown that the information and communication technology (ICT) revolution of the past 50 years can be characterised as a GPT and doesn’t pale with previous GPTs such as steam technology, electricity and the combustion engine. For example, Hempell (2005) concludes that ‘investment in information and communication technologies (ICT) are closely linked to complementary innovations and are most productive in firms with experience from earlier innovations’. In a more recent analysis of the evolution of the Internet, Simcoe (2015) argues that the modularity of the internet has prevented a fall in return to investments in innovation by ‘facilitating low-cost adaptation of a shared general-purpose technology to the demands of heterogeneous applications’. In a review of the data, Liao et al. (2016) conclude that:

‘...ICT investment does contribute to productivity but not in the usual manner –we find a positive (but lagged) ICT effect on technological progress. We argue that for a positive ICT role on growth to actually take place, a period of negative relationship between productivity and ICT investment together with ICT-using sectors’ capacity to learn from the embodied new technology was crucial. In addition, it took a learning period with appropriate complementary co-inventions for the new ICT-capital to become effective and its gains to be realised. Our findings provide solid, further empirical evidence to support ICT as a general purpose technology’.

#### Growth solves nuclear war.

Henricksen 17, \*Thomas H., emeritus senior fellow at the Hoover Institution; (March 23rd, 2017, “Post-American World Order,” Hoover Institution, <http://www.hoover.org/research/post-american-world-order>)

What Is To Be Done?

The first marching order is to dodge any kind of perpetual war of the sort that George Orwell outlined in  “1984,” which engulfed the three super states of Eastasia, Eurasia, and Oceania, and made possible the totalitarian Big Brother regime. A long-running Cold War-type confrontation would almost certainly take another form than the one that ran from 1945 until the downfall of the Soviet Union.

What prescriptions can be offered in the face of the escalating competition among the three global powers? First, by staying militarily and economically strong, the United States will have the resources to deter its peers’ hawkish behavior that might otherwise trigger a major conflict. Judging by the history of the Cold War, the coming strategic chess match with Russia and China will prove tense and demanding—since all the countries boast nuclear arms and long-range ballistic missiles. Next, the United States should widen and sustain willing coalitions of partners, something at which America excels, and at which China and Russia fail conspicuously.

There can be little room for error in fraught crises among nuclear-weaponized and hostile powers. Short- and long-term standoffs are likely, as they were during the Cold War. Thus, the playbook, in part, involves a waiting game in which each power looks to its rivals to suffer grievous internal problems which could entail a collapse, as happened to the Soviet Union.

Some Chinese and Russian experts predict grave domestic problems for each other. They also entertain similar thoughts about the United States, which they view as terminally decadent and catastrophically polarized over politics, ethnicity, and the future direction of the country. So, the brewing three-way struggle also involves a systemic contest, which will test the competitors’ economic and political institutions.

At this juncture, the world is entering a standoff among the three great and several not-so-great powers. Averting war, while defending our interests, will prove a challenge, calling for deft policy, political endurance, and economic growth, as well as sufficient military force to keep at bay aggressive states or prevail over them if ever a war breaks out.

#### Prefer empirical data---it has the most explanatory power.

Cudd 10, Anne Cudd is Professor of Philosophy and Associate Dean for Humanities, University of Kansas. She is the author of Analyzing Oppression (2006), and co-edited (with Anita Superson) Theorizing Backlash (2002) and (with Robin Andreason) Feminist Theory (2005). (2010, “Capitalism, For and Against A Feminist Debate”, Cambridge University Press)

2 The empirical case for capitalism as an actually existing system

Political philosophers often avoid empirical data and statistical analysis of that data, preferring to make normative arguments in a general and theoretical way. Philosophers even take pride in their unwillingness to consult data, as if that made their work more pure and deductively sound. This way of doing political philosophy is mistaken. Theoretical models can too easily be led down a completely irrelevant or erroneous path if they are not forced to face the tribunal of data regularly and rigorously. Take, for example, the literature on egalitarianism, which Elizabeth Anderson ridicules as not being able to be more embarrassing for progressives than if it had been secretly penned by conservatives. 28 By focusing only on theoretically possible, unequal, distributive outcomes, and taking only the most extreme claims of misfortune that could be imagined into account to build their theories, many of the most important of the theorists of egalitarianism construct theories that focus on the rich but bored playboy, the beach bum, and citizens with expensive religious ceremonies to perform. The resulting theories, Anderson argues, would penalize those who had legitimate complaints that their claim to equal democratic citizenship is overlooked in contemporary liberal, capitalist society: gays and lesbians, the disabled, and women, among others. If we begin from these actual problems with the world, then theories are less likely to go astray.

Economic theorists have also made the mistake of floating in the ethereal realm of theory without looking at the data, but it is perhaps less common for economists to do this because their discipline explicitly considers data about economies to be within the bailiwick of economists. One outrageous example in economics is the Laffer curve, which proposed that income tax revenues when graphed against the tax rate formed a kind of sideways parabolic curve, reaching its maximum at a certain point. Famously, the economist responsible first drew the curve on a napkin at a Washington cocktail party. The curve was taken to be proof that tax rates were too high, and the economist did not discourage this interpretation, basking in the glow of his sudden notoriety . Nor are these extremist theories confined to those that have practical application. The reader can no doubt fill in their own examples here, but a general formula for finding such theories is to ask oneself what the logical possibilities are for answering a question. If all the intuitively likely ones are taken, then choose the most unlikely, but still logically possible, option and run with it. Of course, this works particularly well when the empirical evidence is complicated and difficult to assess. But if we are to make any serious progress in political philosophy, we need to do our best to assess the data of the actual world when constructing and testing our theories. So I begin with an assessment of capitalism as it is in the actual world.

#### Holdup threatens the entire IOT economy.

Morton 16, \*Fiona M. Scott Morton is an American economist, currently the Theodore Nierenberg Professor at Yale School of Management; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (2016, “Patent Assertions: Are We Any Closer to Aligning Reward to Contribution?”, https://www.journals.uchicago.edu/doi/full/10.1086/684987#\_i22)

G. Summary

However, our overall conclusions regarding SEPs are more mixed. Policy and legal changes that have reduced the ability of SEP owners to engage in patent holdup appear to have stalled out, especially as regards reform of the IPR rules at SSOs other than the IEEE. If so, this could have important effects on innovation and efficiency. For example, the “Internet of Things” is a new and growing area where royalty stacking and patent holdup appear to be very real dangers. Devices of all sorts, from thermostats to railroad cars to refrigerators, are being given connectivity using standards developed by SSOs. The price of those chips, and whether the IP contained in them costs $5 or $0.50 or $0.005, will determine the nature of new applications and the rate of adoption.

Failure to prevent patent holdup relating to tomorrow’s information technology and communications standards is likely to cause significant social welfare loss in the years ahead. If new and more effective private solutions relating to standard setting do not emerge to promote innovation and protect consumers, antitrust enforcement is one of the only remaining remedies that seems feasible.

V. Conclusions

Over the past five years, the rewards provided to patent owners in the United States have become more closely matched with the value of the technology they contribute. When rewards and contributions are aligned, economic efficiency is promoted because investments into developing new technologies are commensurate with benefits. These changes have come from legislation, the federal courts, and policy statements and enforcement actions by regulators of various types. However, at this juncture, we see a substantial gap persisting between the ability of some patent owners to monetize their patents and the contributions provided by the technology underlying those patents. With the “Internet of Things” poised to create economic growth, this is a problem worthy of further research and policy attention.

#### Emergence of smart cities depends on IoT applications of 5G interoperability standards---absent FRAND, excessive royalties will undermine sustainable development.

Schwartz 18, \*Matt Schwartz, Privacy Fellowship Coordinator at ACT, App Association; (March 2nd, 2018, “It’s Smart to be FRANDly: How the FRAND Commitment Will Determine the Future of Smart Cities”, https://actonline.org/2018/03/02/its-smart-to-be-frandly-how-the-frand-commitment-will-determine-the-future-of-smart-cities/)

In December, we [outlined](https://actonline.org/2017/12/18/smart-cities-connecting-your-community-through-technology/%5d) the emergence of Smart Cities – cities that harness technological innovations like internet of things (IoT) devices and data analytics to improve essential infrastructure in growing urban centers. The technological foundation of Smart Cities aims to improve public safety, better allocate resources, and meet the needs of citizens more quickly.

A central element to Smart Cities is the comprehensive network of sensors and devices implemented within buildings, roads, traffic signs, and parking meters that allows them to interact with public, and potentially private-owned, infrastructure. These sensors will “speak” to one another, communicating information about energy usage, traffic density, or other elements of city management that have traditionally either been analyzed separately or not tracked at all. The potential of Smart Cities allows data to flow from previously disconnected branches of the city and be processed in real-time, unlocking previously unknown insights.

The powerful interoperability of Smart Cities will rely heavily on standardized technologies developed in organizations like the IEEE, which is responsible for standardizing the wi-fi technology we use every day. Standardized technologies often include standard-essential patents (SEPs), which, like their name suggests, are patents declared essential to an industry standard by a standards-setting organization. In simple terms, one cannot implement the standardized technology without using the patent.

Like regular patents, the users of SEPs must pay royalties or licensing fees to the patent owner before they may use it. For example, if a manufacturing company wants to make an IoT device interoperable with a 5G network, the manufacturer must pay a licensing fee to the owner of the SEP that is essential to the 5G standard. SEPs play a vital role in the new innovations we enjoy and have come to expect, and because of the value of these patents, SEP holders have the ability to demand high license fees from those who wish to implement the standard. To offset this competition issue, many SEP holders voluntarily agree to license their SEPs to any willing licensee under fair, reasonable, and non-discriminatory (FRAND) terms.

While wi-fi and LTE are standards that will be vital to Smart City deployment, countless new standardized technologies are being developed that will be integral to any fully-operational Smart City. With reasonable access to SEPs, assured by the FRAND commitment, innovators can enjoy the legal and business certainty they need to compete. While the meaning of the FRAND commitment continues to be refined – as evidenced by the development of SEP best practices recently launched by the App Association in Europe – its foundations are well-established.

But what happens when SEP holders do not abide by the FRAND licensing commitment, or simply refuse to license at all? Sadly, small and medium-sized companies would be forced to accept untenable licensing terms, but more realistically, they would be priced out of using the standard altogether. As a result, it would impose a barrier to innovation that would result in fewer products offered to consumers or cities eager to implement IoT technologies. For example, many hope the rise of autonomous vehicles will be seamlessly integrated into the Smart City network. But how beneficial would it be if only some autonomous vehicle brands are able to license the technology needed to communicate with traffic lights, simply because of the market power of a chipmaker? The FRAND commitment is an important backstop to that unfortunate possibility.

It is vital for SEP holders to honor FRAND licensing terms, if not for small and medium-sized innovators, then for the sustainability of future Smart Cities. FRAND creates a platform for innovation, providing a floor on which companies can stand, innovate, and compete. If the foundation of the FRAND commitment is reneged, American innovators pay a steep price – not only do they lose a key component of product development and market entry, but they are also left with years of expensive negotiations and litigation if they choose to challenge the licensing practice. What’s more, the confidence developed in the open standards development system is shaken, and Smart Cities have fewer choices in IoT solutions for their future.

To achieve the promise of Smart Cities, a balanced standards ecosystem is essential. We must allow small and medium-sized developers to leverage industry standards for innovation and prevent cost-prohibitive royalty structures and negotiating practices that are detrimental to competition, while also ensuring that SEP owners can protect their intellectual property and be fairly compensated for its use. The FRAND commitment continues to be the best framework to achieve this balance, and adherence to its principles will determine the future and success of Smart Cities.

#### Climate change is anthropogenic and causes extinction---5G-enabled smart cities are critical for mitigation and adaptation.

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Currently, the entire planet is at risk due to continual climate change [1–3]. The recorded increase in average temperature across the world in the past hundred years, and the associated changes attributed to this, are known as global warming. Many scientists are convinced by the published evidence that this change is anthropogenic and resulted from the elevated emission levels of global greenhouse gases (GHGs) [4,5]. Gases such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone are responsible for the absorption and emission of thermal radiation. These changes in the relative quantities of the GHGs induce a proportional change in the amount of preserved solar energy. Presently, the accepted indicator for global warming is the sustained rise in the mean temperature worldwide. This definition is designed to account for the fact that there may be some localized exceptions to this rise. For example, there may be cooling experienced in a region while the global temperature may increase altogether, hence the need for average temperature. A key concern with the GHGs trapping of more heat in the atmosphere is that it affects both climate and short scale weather patterns. Consequently, it results in greater numbers of adverse weather events such as storms, heat waves, cold snaps, droughts, and fires [6]. Climate-related risks to health, livelihoods, food security, water supply, human safety, and economic growth are projected to increase with global warming of 1.5 ◦C [7] and further increase further at 2 ◦C, as shown in Figure 1. In addition, the risks to global aggregated economic growth due to the climate change impacts are projected to be lower at 1.5 ◦C than at 2 ◦C by the end of this century.

Carbon dioxide has the most substantial effect on global warming [8]. Although it was once assumed to have an ~100 year lifespan in the atmosphere, careful studies revealed that the situation is far worse, with three-quarters of the gas expected to remain for a time in the region of up to ~1000 years, with the remainder lasting for an indefinite period of time [9]. It was indicated that the present impacts of humanity on the atmosphere can certainly cause a long term problem [10]. Carbon dioxide is released when oil, coal, and other fossil fuels are burnt for the energy we use to power our homes, cars, and smartphones. By lessening its usage, we can curb our own contribution to climate change while saving money. The first challenge is eliminating the burning of coal, oil, and, eventually, natural gas. Oil is the lubricant of the global economy as it is hidden inside such ubiquitous items as plastic and corn, fundamental to the transportation of both consumers and goods. Coal is the substrate, supplying roughly half of the electricity worldwide, a percentage that is likely to grow according to the International Energy Agency (IEA). In fact, buildings contribute up to 43% of all the greenhouse gas emissions worldwide [11], even though investing in thicker insulation and other cost-effective as well as temperature-regulating strategies can save money in the long run. Investment in new infrastructures, or radical upgradation of the existing highways and transmission lines, may help to reduce greenhouse gas emissions, yielding economic growth in the developing countries.

Nations across the globe have kept very high targets to reducing their GHG discharges [12,13]. In order to meet these goals, considerable reductions in city energy usage is required. At a global scale, urban communities represent over half (55%) of the population, which is predicted to reach 68% by the middle of this century [14]. Urban areas claim ownership of the highest levels of energy use, gas emission, and also the largest local economy. As such, it is crucial for urban areas to reduce their consumption and utilize renewable sources wherever available to reduce their gas discharge levels. Smart cities often utilize digital sensors to measure and transmit data about the levels of GHGs in the city at that moment, as a means of tackling them [15]. The efficacy of such a system is thus reliant on the network used to collate and analyze the data collected as an extant network. The mobile telecommunications networks offer a convenient solution to this desire, as their pre-existence has the clear benefit of reducing costs compared to the design and implementation of a novel system. It is recognized that smart cities will certainly act as the key players meeting these ambitious targets [16,17]. In this study, we focused primarily on the potential applications of 5G network technology to control climate change in Singapore. In addition, a clear overview of the sustainability benefits of introducing 5G technology compatible smart cities, buildings, and farms in all aspects of urbanization is provided. Herein, the main purpose is to tackle the negative outcomes associated with anthropogenic climate change, with a particular focus on the contributions that are best made by the telecoms network operators.

Climate change is one of the most challenging problems that humanity has ever faced. Presently, hundreds of millions of lives, innumerable species, entire ecosystems, health, economy, and the future habitability of this planet are at risk. Fortunately, climate change is solvable, we just need to wisely exploit the existing technologies and sciences. Climate change mitigation is a pressing international need in which many management actions are required. The development of 5G technology has been largely driven by smart mobile devices and advanced communication technologies. It may thus serve as a technical enabler for a whole new range of business opportunities, energy, and facilities management, together with industrial applications. Moreover, it may enable different devices to work together seamlessly. Definitely, the 5G cellular network technology is expected to revolutionize the global industries with profound effects on the savings of energy, waste generation and recycling, and water resources management, thus reducing the climate change impacts.

#### Patent holdup is real and necessitates intervention, even if it can’t be systemically proven.

Contreras 19, \*Jorge Contreras, Professor, University of Utah S.J. Quinney College of Law; (2019, “MUCH ADO ABOUT HOLD-UP”, <https://www.illinoislawreview.org/wp-content/uploads/2019/08/Contreras.pdf>)

B. Protective Measures May Already Be Working to Reduce Hold-Up

Another important factor that should be considered regarding the purported lack of empirical evidence of systemic hold-up is the effect that existing policy measures have already had in reducing hold-up. As noted above, the threat of patent hold-up was a primary motivating factor for many SDOs to adopt policies requiring the disclosure and licensing of SEPs. These policies have been in place for decades. In the United States, the first such policy was adopted in 1959 by the American Standards Association (the predecessor to today’s American National Standards Institute (ANSI).102 Today, every one of the more than 200 ANSI-accredited developers of American National Standards must adhere to ANSI’s essential requirements, including the adoption of such a licensing policy for SEPs. Similar policies have existed in European and international standards organizations since at least the 1980s.103 These policies, which were developed by SDOs in large part to reduce the likelihood of hold-up within standard-setting systems, have had several decades to work, and it is likely that the lack of observed hold-up in some studies can be attributed to the successful operation of these policies.

Similarly, antitrust and competition enforcement agencies in the U.S. and Europe have been aware of the potential for hold-up connected with standardization for many years. Accordingly, they have brought enforcement actions when it has been alleged that hold-up behavior has resulted in a violation of the antitrust laws. High-profile enforcement actions against patent holders such as Rambus, 104 Google 105 and Qualcomm106 send powerful deterrent signals to the market and warn others not to engage in similar behavior lest they, too, become the subject of agency enforcement. Like SDO policies, it is likely that the general market awareness of agency interest in standard-setting and hold-up has, to a degree, limited the amount of hold-up that is actually attempted in the marketplace, thereby limiting the direct evidence of hold-up as a systemic problem.

But do the deterrent effects of SDO and agency efforts to reduce hold-up signify that hold-up is not a problem? Certainly not. To reach such a conclusion would be perverse: akin to claiming that burglary is not a problem in a neighborhood that experiences reduced burglary rates after it has implemented an active neighborhood watch program and enhanced policing.

C. Indicia of Healthy Markets do not Prove the Absence of Anticompetitive Conduct

As noted above, one of the principal arguments advanced by commentators seeking to refute the “hold-up theory” is that markets for telecommunications products, namely smart phones, are robust – evidenced by increasing product functionality, decreasing consumer prices and rapid innovation -- and that this degree of robustness indicates that hold-up cannot be a problem in these markets.107 If hold-up were a problem in these markets, they reason, we would see product stagnation, stable (but high) prices, and a lack of competition – features associated with classic examples of hold-up in markets for products such as natural resources and agricultural goods.108

But this argument relies on a false syllogism: hold-up results in market dysfunction; if a market functions well, then it cannot be subject to hold-up. The weaknesses in this argument are multifold. First, hold-up may exist in individual instances without sufficient weight to affect overall market characteristics, particularly in a large global market such as mobile telecommunications. Thus hold-up may exist, even in a market that outwardly appears to be functioning well. Second, there is no valid counterfactual to use to compare the health and robustness of the market for mobile telecommunications products.109 Other consumer electronics devices, such as televisions and DVD players, do not compare well with mobile telecommunications devices, which have taken on a unique character in the modern networked economy. Thus, observing the strength of the market fails to answer the critical questions “compared to what?” and how much stronger the market might be (through more product diversity, functionality, price reduction) without hold-up?

A simple historical illustration is useful in this context. During the decade leading up to the enactment of the Sherman Antitrust Act of 1890, several major U.S. commodity markets (e.g., steel, salt, petroleum, coal, sugar, lead, and others) came under intense scrutiny for a variety of allegedly anticompetitive industrial arrangements. One might have argued that these markets, had they been subject to the sorts of anticompetitive collusion that the Sherman Act sought to address, should have seen reductions of output and increases in price. Yet, between 1880 and 1890, U.S. output of salt, petroleum, steel, and coal all increased significantly, and prices of steel, sugar and lead all dropped significantly.110 Do these positive market indicia demonstrate that the subject markets were not subject to anticompetitive collusion, and that the Sherman Act was not necessary? Certainly, investigations of these industries revealed significant cartel behavior. I would suggest that few commentators today would argue that the coal, steel, sugar and other major industrial producers of the late nineteenth century were innocent of collusive and anticompetitive conduct, or that the Sherman Act was not a necessary and beneficial measure for the U.S. economy.111 Yet, had we relied solely on the positive characteristics exhibited by these markets as proof that anticompetitive conduct did not exist, then perhaps the Sherman Act never would have been enacted.

By the same token, the fact that global markets for standardized products such as computers and smart phones appear to be thriving does not itself refute the possibility of hold-up nor the existence of anticompetitive conduct in these markets. Nor does it allow regulators and policy makers to drop their guard or cease to monitor these important industries.

#### The plan requires SSO’s to administer reasonable action to prohibit ex post opportunism---that solves

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3. Application of the Basic Legal Principles

The antitrust principle is straightforward: industry-wide collaboration through SSOs to establish procompetitive standards is permitted only if it is no more restrictive of competition than reasonably necessary to enable creation of the standards. When standard setting predictably creates technology monopolies that, if unrestrained, will enable anticompetitive ex post opportunism that would otherwise not occur, an SSO that does not take effective measures to prevent or minimize such ex post opportunism engages in conduct that is more restrictive of competition than necessary. In that case, the SSO and, in appropriate cases, its members, may well violate Section 1 of the Sherman Act.

Under this principle, SSO procedures and FRAND rules should be evaluated based on whether they lead to reasonable SEP royalties, using the competitive ex ante licensing standard discussed above, which has been adopted by the courts in patent law. Put differently, FRAND rules should be evaluated based on their ability to prevent SEP holders from obtaining more than the ex ante value of their technology from implementers.

This limitation would not prevent a SEP holder from proﬁting, perhaps greatly, from participating in the SSO and having its patented technology included in the standard. The SEP holder continues to be rewarded for its technology because the inclusion of its technology in the standard can still greatly increase the volume of licensing opportunities available to the SEP holder.

Whether a particular set of FRAND rules are sufficiently effective in preventing ex post opportunism will depend on the particular circumstances. The procedural unfolding of the case will also depend upon the circumstances. As a general matter, the case would probably be structured as an ordinary Rule of Reason case.82

First, the plaintiff would have to demonstrate harm to competition as a result of the collaboration of the SSO’s members, many of which compete with one another. In this case, the harm to competition would stem from the ability of the SEP holder to exercise monopoly power by obtaining royalties in excess of the competitive, ex ante level. The decision to include patented technologies in the standard would be the allegedly unlawful agreement. Notably, the court need not determine what a FRAND royalty is; it would suffice to determine that market power has been created or exercised, and that existing SSO rules and policies were not adequate to prevent the competitive harm. The defendant, which could be the SSO or perhaps one or more SSO members, would win at this point if the plaintiff failed to show harm to competition. If might fail if the standard faces substantial competition and the court concludes that the SEP holder therefore does not have market power or if the SSO’s rules and policies are found to be effective in preventing ex post opportunism, even if the plaintiff or even the court thinks that other rules and policies would be preferable.

Second, if the plaintiff makes the requisite showing of harm to competition, the defendant(s) would then have to show some procompetitive justiﬁcation— in this case, the beneﬁts of the standard. These two initial steps should be straightforward.

Third, if as is likely the defendant is able to show a procompetitive justiﬁcation, the plaintiff would have to show that the SSO could have used available, reasonable alternatives to realize the efficiency beneﬁts with less or none of the competitive harms. The plaintiff might identify reasonable alternatives that would have led to a different standard, based on including unpatented technology in the standard or perhaps involving fewer SEPs or fewer owners of SEPs, which would be less subject to patent holdup. More likely, the plaintiff could suggest alternative SSO rules that would not change the standard, but would reduce the likelihood or extent of ex post opportunism. For example, the plaintiff might suggest more rigorous FRAND-type rules, such as rules that set forth more precise principles on which FRAND royalties are to be determined and the circumstances under which SEP holders might seek injunctions.

Fourth, the burden would then shift to the defendant(s) to show that the beneﬁts of the standard could not have been realized if the SSO had adopted any of the proffered alternatives or that those alternatives were unrealistic.83 The plaintiff would be entitled to judgment if the court concludes that those beneﬁts could have been realized with less competitive harm if the SSO had adopted the standard with different IPR rules or policies.

Our overall sense, based on experience and the empirical literature, is that the extant FRAND rules are generally useful, but tend to be inadequate because they are imprecise and leave unresolved such critical issues as (a) the meaning of a reasonable royalty, even conceptually; (b) the meaning of “non-discriminatory;” (c) to whom licenses must be offered; and (d) under what circumstances may a SEP holder obtain an injunction.84 These imprecise FRAND commitments are therefore not sufficient to adequately prevent ex post opportunism. The recent revisions to IEEE’s FRAND policy represent a signiﬁcant step in the right direction, but even this advance leaves important questions unanswered.85 If FRAND rules are inadequate in these ways, litigation involving extant FRAND rules would likely be resolved only at the ﬁnal, fourth step. The defendant would be able to demonstrate the beneﬁts created by the standard; the plaintiff would be able to demonstrate the creation of market power and that other reasonable and practical rules or policies would ameliorate the problem. The case would thus turn on whether the defendant is able to demonstrate that signiﬁcant beneﬁts associated with standardization could not have been realized if the SSO had adopted those other rules or policies.

The court would have available a variety of possible remedies if the plaintiff prevails. Implementers that paid supracompetitive royalties or were unlawfully excluded in whole or in part from product markets as a result of the inadequate FRAND policies would be entitled to damages and, in some cases, to treble damages.86 If the unlawful SSO conduct is regarded as the collective action of the SSO and its members, which is likely to be the case in most instances, SSO members would be jointly and severally liable for the damages. Forward-looking injunctive relief aimed at restoring competition would need to be fashioned to the requirements of the individual case. For example, a court could order the SSO to adopt a new rule or policy proposed by the plaintiff. If the court is reluctant to take on that governance role, it might give the SSO a period of time—maybe ninety days—to develop a rule, subject to the court’s ultimate approval, which would adequately ameliorate the competitive problem created by the SSO. Alternatively or in addition, the court might order the parties to attempt to negotiate a rule or policy on which they can agree. And, depending on the circumstances, the court might order SEP holders, including at least those that were defendants in the case, to comply with the new SSO rules and policies.

### 1AC---Cybersecurity ADV

#### Advantage 2 is Cybersecurity:

#### Aggressive patent strategies create structural flaws in 5G standardization that imperils domestic cybersecurity---market competition reduces the incidence of vulnerability and severity of attacks.

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III. COMPETITION AND CYBERSECURITY

In addition to the historical review done so far, another approach to understanding the relationship among patents, competition, and national security is to consider the role of cybersecurity. There is little doubt that computer system vulnerabilities that enable hacking and spread of computer exploits are a threat to the nation’s defenses, so better cybersecurity is a key part of national security strategy.155

Strong competition can thus complement national security by enhancing domestic cybersecurity, and patent assertion that unduly weakens competition detracts from cybersecurity.156 Competition promotes better cybersecurity in at least two ways. First, multiple studies show that competition encourages firms to improve their products on multiple vectors including cybersecurity. Second, competition avoids a situation that security experts call a “monoculture,” which increases vulnerability to severe cyberattacks. As former Secretary of Homeland Security Michael Chertoff wrote recently, “We need competition and multiple providers, not a potentially vulnerable technological monoculture,” to guarantee national security.157 Thus, cybersecurity provides a useful lens for understanding how unfettered patent assertion and licensing can detract from national security.

A. Cybersecurity as Competitive Value-Add

Competition enhances national security by reducing the incidence of technical vulnerabilities. That effect is especially important for security sensitive systems such as mobile telecommunications.

Intuitively, a causal chain from competition to cybersecurity makes logical sense. Computer security is a value-added benefit to consumers, so firms in competitive markets are likely to use security to gain an edge over their competitors.158 In monopolized markets, though, there may be less external impetus to test products for flaws, and the monopolist may choose to focus less on security and more on new product features or increased product quality.

Economic research confirms these hypotheses about competition leading to better cybersecurity. A 2009 empirical study of web browsers considered the impact of market concentration on the amount of time that vendors took to fix security vulnerabilities as they were discovered.159 The study found that the presence of more competitors correlated with faster cybersecurity response—a reduction of 8–10 days in response time per additional market rival.160 Similarly, business researchers in 2005 modeled incentives for firms to engage in sharing of cybersecurity information, and concluded that the “inclination to share information and invest in security technologies increases as the degree of competitiveness in an industry increases.”161 Another study found that, where two software firms are in competition, at least one will be willing to take on some degree of risk and responsibility for cybersecurity, whereas a monopoly software firm will consistently fail to accept such responsibility.162 To be sure, an unpublished study from 2017 found that some market concentration can make firms more responsive to cybersecurity issues, but only to a point: “being in a dominant position reduces the positive effect of having less competitors on the responsiveness of the vendor,” and indeed the “more dominant the firm is, the less rapid it is in releasing security patches.”163 This research confirms that competition is more conducive to cybersecurity.

It is not hard to see how this applies to emerging communication technologies markets. In the absence of competition, the above research suggests that device manufacturers, chip makers, and software developers will lack incentives to respond to vulnerabilities, to share information about cybersecurity practices and issues, and to take responsibility for security matters. Mobile phone chips have had their share of cybersecurity failures already.164 The best way to flush out ongoing and future cybersecurity issues is to maintain competitive pressure at all levels of the supply chain.

B. Vulnerabilities of “Monocultures”

A second reason why monopoly undermines cybersecurity is that monopoly leads to a “monoculture” of single-vendor products, opening the door to massive systemic failure in the case of a cyberattack. Computer researchers developed the theory of software monocultures in the early 2000s, in response to the regular phenomenon of computer viruses and other attacks spreading rapidly by exploiting flaws in the dominant operating system at the time, Microsoft Windows.165 Where a computer system such as Windows has a commanding share of users, a virus that exploits a flaw in that system can quickly spread to infect a whole interconnected ecosystem. An operating system monopoly thus enables fast and easy spread of cyberattacks, and better cybersecurity would be achieved through greater diversity in online systems.166 As one research group posited, “a network architecture that supports a collection of heterogeneous network elements for the same functional capability offers a greater possibility of surviving security attacks as compared to homogeneous networks.”167

There has been considerable study of the theory that computer monocultures are naturally more vulnerable to attacks.168 In one study, computer science researchers reviewed a catalog of 6,340 software vulnerabilities recorded in 2007, to compare whether comparable software would share the same flaws.169 Of the 2,627 vulnerabilities applicable to application software (as opposed to operating systems, web scripts, and other software components), only 29 (1.1%) applied to substitute products from different vendors but providing the same functionality.170 By contrast, different versions of a single software product were found to share vulnerabilities 84.7% of the time.171 Thus, software monocultures share exploitable flaws even when there is some variation in versions across the monoculture; by contrast, diversity in software is almost guaranteed to prevent a single flaw from affecting all users.

In the case of 5G and wireless mobile communications, a monoculture is an especially concerning possibility. To the extent that systems such as smart city sensors or communication networks are widely deployed in a monoculture fashion, a widespread attack could have devastating consequences, potentially blacking out a region and affecting essential services such as 911.172 A monoculture that is vulnerable to so-called “rootkits” or “backdoors”—maliciously installed software that enable bad actors to commandeer systems—could also enable mass surveillance or spying by private hackers or foreign governments.173 The presence of systems from multiple vendors would mitigate these possibilities.

#### Insecure technical standards cause inevitable systemic grid collapse---extinction.

DeNardis 21, \*Dr. Laura DeNardis, PhD in Science and Technology Studies from Virginia Tech, Dean of the School of Communication at American University, and Gordon M. Goldstein, Adjunct Senior Fellow at the Council on Foreign Relations, (March 1st, 2021, “The Real Lesson of the Texas Power Debacle”, Lawfare, 3/1/2021, https://www.lawfareblog.com/real-lesson-texas-power-debacle)

The infrastructure was essential, ubiquitous and providing basic functionality for everything in daily life from water to heat and transportation. And in an instant it was gone, plunging tens of thousands of residents into a life-threatening crisis. This is, of course, the narrative of the recent debacle in Texas, where a winter storm overwhelmed the state’s electrical grid and brought the state to a near-total blackout. But it should also be interpreted as a preemptive warning of what Americans will face from the next generation of the internet and the new realm of cybersecurity risk it will dramatically amplify.

Both forms of infrastructure—a state-run electrical grid and the 5G and “internet of things” future to which we are rapidly hurtling—share three attributes. First, their construction reflects a lack of imagination about the danger that can quickly coalesce when seemingly remote threat scenarios become real. Second, compounding a lack of analytic imagination is an absence of preparedness. Third, for both the Texas electrical grid and the emerging internet, public policy protections are either meager or completely absent.

In planning for the resilience of its electrical grid, public officials in Texas discounted the potentially devastating disruption that could occur from unpredictable events—whether related to climate change or just a once-a-century anomaly. They also eschewed precautions other states take seriously by allowing for the interconnection of electrical grid supply chains across their borders, ostensibly because of their ideological rejection of federal regulatory oversight governing such arrangements.

As the United States builds out a new national 5G cyber-physical communications network through private service providers, Americans similarly discount the risks—myriad in their diversity and severity—that are orders of magnitude more significant than what Texas confronted recently. More physical things than people are already connected. The super empowered internet of tomorrow, known among some in the field as the “internet of everything,” will exceed by tens of billions of devices the number of connections between individuals simply communicating via social media or digital screens.

This confronts policymakers with an imminent threat: A cyber outage is no longer about losing digital communications but about losing basic societal functioning and even human life. The failure of imagination is to think of the SolarWinds attack on U.S. federal agencies and tech companies as a worst-case scenario. The failure of imagination is to think of cybersecurity through a content-centric lens rather than as possible attacks on the material world. The emergence of internet-connected cardiac devices, digitally dependent cars, and internet-connected agriculture systems portend the stakes of a cyberattack to health care, economic and social functioning, and food security.

The United States should be prepared for, and certainly not be caught by surprise by, such cyberattacks. Yet, the internet of everything is notoriously insecure. Internet-connected physical objects are not necessarily upgradeable. Nor do they come with adequate default security and encryption. The 5G infrastructure that helps connect digital objects has been at the center of debates over Chinese espionage. Industrial cyber-physical systems are based on technical standards that have not been collaboratively vetted for security and interoperability. One of the most infamous cyberattacks—the so-called Mirai botnet that took down major media sites and corporations—hijacked these insecure objects in homes to carry out the assault. The United States is not yet prepared.

Finally, in the race to conceive and deploy effective public policy responses, the U.S. government as a whole is hardly more anticipatory or synthesized in its response to potential calamity than the state of Texas. The focus of U.S. cyber policy remains on information policy issues such as disinformation, manipulation and violent speech rather than securing the digital world that now powers our material day-to-day lives. The Biden administration confronts an enormous challenge in crafting a comprehensive strategy to the cybersecurity risks foreshadowed by the ruinous experience in Texas and its management of vital infrastructure. While the digital world has leapt from two-dimensional to three-dimensional space, cyber policy has not at all jumped from 2D to 3D.

This failure of imagination, preparedness and policy protection must not be America’s cyber future; the stakes are far too high and the costs are far too great. The Texas disaster is a potent illustration of what has always been true: Our digital society and economy are extremely vulnerable and grow more porous and subject to penetration day by day. As digital sensors and cyber control systems become further embedded in physical infrastructure like energy systems, agriculture and transportation, there is no longer a separation between security of the “real” world and security of the online world. They are entangled and increasingly enmeshed—and policy has yet to catch up to either envisioning or mitigating the looming threats the U.S. confronts.

If the energy grid cannot weather a winter storm, how can it be expected to withstand a major cyberattack? What other vital forms of national infrastructure—ranging from water, bridges, highways and roads, and ultimately our day-to-day financial system—are comparably at risk? As Texas dramatizes, it is neither hyperbolic nor exaggerated to assert that our survival could now depend on securing the inevitable cyber-physical future that is accelerating with stunning rapidity.

#### Actors have the means and motivations to strike critical infrastructure.

Wintch 21, \*Timothy M. Wintch, an active-duty Major in the United States Air Force. He is currently a graduate student at the Oettinger School of Science & Technology Intelligence, National Intelligence University, in Bethesda, Maryland. Mr. Wintch has over 11 years of experience in command-and-control operations as an Air Battle Manager. He holds a Bachelor of Arts in Politics from the University of California, Santa Cruz, and a Master of Arts in Military Studies from American Military University. (April 20th, 2021, “PERSPECTIVE: Cyber and Physical Threats to the U.S. Power Grid and Keeping the Lights on”, https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/)

Among critical infrastructure sectors in the U.S., energy is perhaps the most crucial of the 16 sectors defined by the Department of Homeland Security. This sector is so vital because it provides the energy necessary to run every other critical infrastructure sector. However, the U.S. power grid, the backbone of the energy sector, is built upon an aging skeleton that is becoming increasingly vulnerable every day. Whether from terrorists or nation-states like Russia and China, the power grid is susceptible to not just physical attacks, but also to cyber intrusion as well. However, much of this threat can be mitigated if the U.S. takes the appropriate steps to safeguard the power grid and avoid a potential catastrophe in the future.

Since Sept. 11, 2001, terrorism on U.S. soil has been at the forefront of American consciousness. Critical infrastructure provides an appealing target because of the disproportionally large impact even a small attack can have on the sectors. In particular, the power grid represents a particularly lucrative target, both in terms of the ease of access and the large impact it can make. The National Research Council stated that the U.S. power grid is “vulnerable to intelligent multi-site attacks by knowledgeable attackers intent on causing maximum physical damage to key components on a wide geographical scale.”[[1]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn1) Additionally, the physical security of transmission and distribution systems is difficult due to the dispersed nature of these key components, which in turn is advantageous to attackers as it reduces the likelihood of their capture.[[2]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn2) From 2002-2012, approximately 2,500 physical attacks occurred against transmission lines and towers worldwide and approximately 500 attacks against transformer substations.[[3]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn3) Terrorists have the motivation to attack the U.S. power grid but the very nature of the grid makes it highly vulnerable. The power grid is not only at risk from physical attacks, but also nation-state cyberattacks.

One nation that has shown both the capability and intent to use attacks against critical energy infrastructure is Russia, as demonstrated in their 2015 annexation of Crimea from Ukraine. A Russian cyber threat group known as Sandworm, which used its BlackEnergy malware, attacked Ukrainian computer systems that provide remote control of the Ukraine power grid.[[4]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn4) This attack, and another in 2016, each left the capital Kiev without power, prompting cyber experts to raise concern about the same malware already existing in NATO and the U.S. power grids.[[5]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn5) In any conflict between Russia and NATO, not only would similar cyberattacks pose a threat, but so would potential physical attacks severing fuel oil and natural gas lines to Western Europe. Russia has both the capability and intent to attack critical infrastructure, particularly power grids, during future conflicts in their “hybrid warfare” approach.

Another nation that has the capability to attack critical energy infrastructure is China, representing a threat to not just the U.S. energy infrastructure but also that of our allies whose support would be vital in a major conflict. A recent NATO report highlighted this threat from China’s Belt and Road Initiative, stating that “[China’s] foreign direct investment in strategic sectors [such as energy generation and distribution] …raises questions about whether access and control over such infrastructure can be maintained, particularly in crisis when it would be required to support the military.”[[6]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn6) Like Russia, China has been active with cyber intrusions in U.S. energy infrastructure. The Mission Support Center at Idaho National Laboratory characterized these as attacks as “multiple intrusions into US ICS/SCADA [Industrial Control Systems/Supervisory Control and Data Acquisition] and smart grid tools [that] may be aimed more at intellectual property theft and gathering intelligence to bolster their own infrastructure, but it is likely that they are also using these intrusions to develop capabilities to attack the [bulk electric system], as well.”[[7]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn7) China, therefore, has both the capability and intent to conduct cyber intrusions and attacks for myriad reasons.

Another arm of this threat is the reliance the U.S. energy industry has on imports from China, especially transformers. In early 2020, federal officials seized a transformer in the port of Houston that had been imported by the Jiangsu Huapeng Transformer Company before sending it to Sandia National Laboratory in Albuquerque. Sandia is contracted by the U.S. Department of Energy for mitigating national security threats.[[8]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn8) The Wall Street Journal reported that “Mike Howard, chief executive of the Electric Power Research Institute, a utility-funded technical organization, said that the diversion of a huge, expensive transformer is so unusual – in his experience, unprecedented – that it suggests officials had significant security concerns.”[[9]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn9) Previously destined for the Washington Area Power Administration’s Ault, Colo., substation, the transformer is believed to have been seized due to “backdoor” exploitable hardware emplaced by the Chinese prior to shipment.[[10]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn10) Shortly after these events, President Trump issued Executive Order 13920, “[Securing the United States Bulk-Power System](https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-securing-united-states-bulk-power-system/),” essentially limiting the import of Chinese-built critical energy infrastructure components due to concerns about cybersecurity.[[11]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn11) Interestingly, Jiangsu Huapeng “boasted that it supported 10 percent of New York City’s electricity load.”[[12]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn12)

Franklin Kramer, the former Assistant Secretary of Defense for International Security Affairs, testified before a U.S. House of Representatives Energy and Commerce subcommittee during an energy and power hearing in 2011 and said that a “highly-coordinated and structured cyber, physical, or blended attack on the bulk power system, however, could result in long-term (irreparable) damage to key system components in multiple simultaneous or near-simultaneous strikes.” He added that “an outage could result with the potential to affect a wide geographic area and cause large population centers to lose power for extended periods.”[[13]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn13) Even the inclusion of features such as smart grids to the overall grid structure poses new vulnerabilities through their connectivity. Kramer stated that “such connectivity means that the distribution system could be a key vector for a national security attack on the grid.”[[14]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/#_ftn14)

#### Those attacks cause accidental nuclear escalation.

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation)

Yet another pathway to escalation could arise from a cascading series of cyberstrikes and counterstrikes against vital national infrastructure rather than on military targets. All major powers, along with Iran and North Korea, have developed and deployed cyberweapons designed to disrupt and destroy major elements of an adversary’s key economic systems, such as power grids, financial systems, and transportation networks. As noted, Russia has infiltrated the U.S. electrical grid, and it is widely believed that the United States has done the same in Russia.[12](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12) The Pentagon has also devised a plan known as “Nitro Zeus,” intended to immobilize the entire Iranian economy and so force it to capitulate to U.S. demands or, if that approach failed, to pave the way for a crippling air and missile attack.[13](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12)

The danger here is that economic attacks of this sort, if undertaken during a period of tension and crisis, could lead to an escalating series of tit-for-tat attacks against ever more vital elements of an adversary’s critical infrastructure, producing widespread chaos and harm and eventually leading one side to initiate kinetic attacks on critical military targets, risking the slippery slope to nuclear conflict. For example, a Russian cyberattack on the U.S. power grid could trigger U.S. attacks on Russian energy and financial systems, causing widespread disorder in both countries and generating an impulse for even more devastating attacks. At some point, such attacks “could lead to major conflict and possibly nuclear war.”[14](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote14)

These are by no means the only pathways to escalation resulting from the offensive use of cyberweapons. Others include efforts by third parties, such as proxy states or terrorist organizations, to provoke a global nuclear crisis by causing early-warning systems to generate false readings (“spoofing”) of missile launches. Yet, they do provide a clear indication of the severity of the threat. As states’ reliance on cyberspace grows and cyberweapons become more powerful, the dangers of unintended or accidental escalation can only grow more severe.

#### Cyber-compromised NC3 causes nuclear war.

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, <https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation>)

The Nuclear-Cyber Connection

These links exist because the NC3 systems of the United States and other nuclear-armed states are heavily dependent on computers and other digital processors for virtually every aspect of their operation and because those systems are highly vulnerable to cyberattack. Every nuclear force is composed, most basically, of weapons, early-warning radars, launch facilities, and the top officials, usually presidents or prime ministers, empowered to initiate a nuclear exchange. Connecting them all, however, is an extended network of communications and data-processing systems, all reliant on cyberspace. Warning systems, ground- and space-based, must constantly watch for and analyze possible enemy missile launches. Data on actual threats must rapidly be communicated to decision-makers, who must then weigh possible responses and communicate chosen outcomes to launch facilities, which in turn must provide attack vectors to delivery systems. All of this involves operations in cyberspace, and it is in this domain that great power rivals seek vulnerabilities to exploit in a constant struggle for advantage.

The use of cyberspace to gain an advantage over adversaries takes many forms and is not always aimed at nuclear systems. China has been accused of engaging in widespread cyberespionage to steal technical secrets from U.S. firms for economic and military advantages. Russia has been accused, most extensively in the Robert Mueller report, of exploiting cyberspace to interfere in the 2016 U.S. presidential election. Nonstate actors, including terrorist groups such as al Qaeda and the Islamic State group, have used the internet for recruiting combatants and spreading fear. Criminal groups, including some thought to be allied with state actors, such as North Korea, have used cyberspace to extort money from banks, municipalities, and individuals.[4](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote04) Attacks such as these occupy most of the time and attention of civilian and military cybersecurity organizations that attempt to thwart such attacks. Yet for those who worry about strategic stability and the risks of nuclear escalation, it is the threat of cyberattacks on NC3 systems that provokes the greatest concern.

This concern stems from the fact that, despite the immense effort devoted to protecting NC3 systems from cyberattack, no enterprise that relies so extensively on computers and cyberspace can be made 100 percent invulnerable to attack. This is so because such systems employ many devices and operating systems of various origins and vintages, most incorporating numerous software updates and “patches” over time, offering multiple vectors for attack. Electronic components can also be modified by hostile actors during production, transit, or insertion; and the whole system itself is dependent to a considerable degree on the electrical grid, which itself is vulnerable to cyberattack and is far less protected. Experienced “cyberwarriors” of every major power have been working for years to probe for weaknesses in these systems and in many cases have devised cyberweapons, typically, malicious software (malware) and computer viruses, to exploit those weaknesses for military advantage.[5](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote05)

Although activity in cyberspace is much more difficult to detect and track than conventional military operations, enough information has become public to indicate that the major nuclear powers, notably China, Russia, and the United States, along with such secondary powers as Iran and North Korea, have established extensive cyberwarfare capabilities and engage in offensive cyberoperations on a regular basis, often aimed at critical military infrastructure. “Cyberspace is a contested environment where we are in constant contact with adversaries,” General Paul M. Nakasone, commander of the U.S. Cyber Command (Cybercom), told the Senate Armed Services Committee in February 2019. “We see near-peer competitors [China and Russia] conducting sustained campaigns below the level of armed conflict to erode American strength and gain strategic advantage.”

Although eager to speak of adversary threats to U.S. interests, Nakasone was noticeably but not surprisingly reluctant to say much about U.S. offensive operations in cyberspace. He acknowledged, however, that Cybercom took such action to disrupt possible Russian interference in the 2018 midterm elections. “We created a persistent presence in cyberspace to monitor adversary actions and crafted tools and tactics to frustrate their efforts,” he testified in February. According to press accounts, this included a cyberattack aimed at paralyzing the Internet Research Agency, a “troll farm” in St. Petersburg said to have been deeply involved in generating disruptive propaganda during the 2016 presidential elections.[6](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote06)

Other press investigations have disclosed two other offensive operations undertaken by the United States. One called “Olympic Games” was intended to disrupt Iran’s drive to increase its uranium-enrichment capacity by sabotaging the centrifuges used in the process by infecting them with the so-called Stuxnet virus. Another left of launch effort was intended to cause malfunctions in North Korean missile tests.[7](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote07) Although not aimed at either of the U.S. principal nuclear adversaries, those two attacks demonstrated a willingness and capacity to conduct cyberattacks on the nuclear infrastructure of other states.

Efforts by strategic rivals of the United States to infiltrate and eventually degrade U.S. nuclear infrastructure are far less documented but thought to be no less prevalent. Russia, for example, is believed to have planted malware in the U.S. electrical utility grid, possibly with the intent of cutting off the flow of electricity to critical NC3 facilities in the event of a major crisis.[8](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote08) Indeed, every major power, including the United States, is believed to have crafted cyberweapons aimed at critical NC3 components and to have implanted malware in enemy systems for potential use in some future confrontation.

Pathways to Escalation

Knowing that the NC3 systems of the major powers are constantly being probed for weaknesses and probably infested with malware designed to be activated in a crisis, what does this say about the risks of escalation from a nonkinetic battle, that is, one fought without traditional weaponry, to a kinetic one, at first using conventional weapons and then, potentially, nuclear ones? None of this can be predicted in advance, but those analysts who have studied the subject worry about the emergence of dangerous new pathways for escalation. Indeed, several such scenarios have been identified.[9](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote09)

The first and possibly most dangerous path to escalation would arise from the early use of cyberweapons in a great power crisis to ~~paralyze~~ undermine the vital command, control, and communications capabilities of an adversary, many of which serve nuclear and conventional forces. In the “fog of war” that would naturally ensue from such an encounter, the recipient of such an attack might fear more punishing follow-up kinetic attacks, possibly including the use of nuclear weapons, and, fearing the loss of its own arsenal, launch its weapons immediately. This might occur, for example, in a confrontation between NATO and Russian forces in east and central Europe or between U.S. and Chinese forces in the Asia-Pacific region.

Speaking of a possible confrontation in Europe, for example, James N. Miller Jr. and Richard Fontaine wrote that “both sides would have overwhelming incentives to go early with offensive cyber and counter-space capabilities to negate the other side’s military capabilities or advantages.” If these early attacks succeeded, “it could result in huge military and coercive advantage for the attacker.” This might induce the recipient of such attacks to back down, affording its rival a major victory at very low cost. Alternatively, however, the recipient might view the attacks on its critical command, control, and communications infrastructure as the prelude to a full-scale attack aimed at neutralizing its nuclear capabilities and choose to strike first. “It is worth considering,” Miller and Fontaine concluded, “how even a very limited attack or incident could set both sides on a slippery slope to rapid escalation.”[10](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote10)

What makes the insertion of latent malware in an adversary’s NC3 systems so dangerous is that it may not even need to be activated to increase the risk of nuclear escalation. If a nuclear-armed state comes to believe that its critical systems are infested with enemy malware, its leaders might not trust the information provided by its early-warning systems in a crisis and might misconstrue the nature of an enemy attack, leading them to overreact and possibly launch their nuclear weapons out of fear they are at risk of a preemptive strike.

“The uncertainty caused by the unique character of a cyber threat could jeopardize the credibility of the nuclear deterrent and undermine strategic stability in ways that advances in nuclear and conventional weapons do not,” Page O. Stoutland and Samantha Pitts-Kiefer wrote in 2018 paper for the Nuclear Threat Initiative. “[T]he introduction of a flaw or malicious code into nuclear weapons through the supply chain that compromises the effectiveness of those weapons could lead to a lack of confidence in the nuclear deterrent,” undermining strategic stability.[11](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote11) Without confidence in the reliability of its nuclear weapons infrastructure, a nuclear-armed state may misinterpret confusing signals from its early-warning systems and, fearing the worst, launch its own nuclear weapons rather than lose them to an enemy’s first strike. This makes the scenario proffered in the 2018 NPR report, of a nuclear response to an enemy cyberattack, that much more alarming.

#### The subject-formation of debate should center actualizable alternatives---historically, radical action without a blueprint has lead to large-scale atrocity.

**Condit 15** – PhD, Distinguished Research Professor of Communication Studies at the University of Georgia---sex edited

(Celeste, “Multi-Layered Trajectories for Academic Contributions to Social Change,” Quarterly Journal of Speech, 101.1)

Thus, **when** Žižek and **others urge us to “Act”** with violence **to destroy the current Reality, without a vision of an alternative, on the grounds that the links between actions and consequences are never certain, we can call**his**[the] appeal**both**a failure of imagination**and a failure of reality. As for reality, **we have dozens of revolutions as models, and the historical record indicates quite clearly that they generally lead not to harmonious cooperation** (what I call “AnarchoNiceness” to gently mock the romanticism of Hardt and Negri) **but instead to the production of totalitarian states** **and**/or **violent factional strife.** A materialist constructivist epistemology accounts for this by predicting that it is not possible for symbol-using animals to exist in a symbolic void. **All symbolic movement has a trajectory, and if you have not imagined a potentially realizable alternative for that trajectory to take, then what people will leap into is biological predispositions**—**the first iteration of which is the rule of the strongest** primate. Indeed,**this is what experience with revolutions has shown to be the most probable outcome of a revolution that is merely against an Evil.** **The failure of imagination** in such rhetorics thereby **reveals itself to be critical**, so it is worth pondering sources of that failure. The rhetoric of “the kill” in social theory in the past half century has repeatedly reduced to the leap into a void because the symbolized alternative that the context of the twentieth century otherwise predispositionally offers is to the binary opposite of capitalism, i.e., communism. That rhetorical option, however, has been foreclosed by the historical discrediting of the readily imagined forms of communism (e.g., Žižek9). **The hard work to invent better alternatives is not as dramatically enticing as the story of the kill: such labor is piecemeal**, **intellectually difficult**, **requires multi-disciplinary understandings, and** perhaps **requires more creativity** **than the typical academic theorist can muster**. **In the absence of a viable alternative**, the **appeals to**Radical**Revolution seem to have been** **sustained by the emotional zing of the kill**, in many cases amped up by the appeal of autonomy and manliness (Žižek uses the former term and deploys the ethos of the latter). But **if one does not provide a viable vision** that **offers a reasonable chance of leaving most people better off than they are now, then Fox News has a better offering** (you'll be free and you'll get rich!). **A revolution posited as a void cannot succeed as a horizon of history**, **other than as constant local scale violent actions**, perhaps connected by shifting networks we call “terrorists.” This analysis of the geo-political situation, of the onto-epistemological character of language, and of the limitations of the dominant horizon of social change indicates that **the focal project** **for progressive Left Academics should** now **include the hard labor** **to produce alternative visions that appear materially feasible.**

# 2AC

# 2AC---Round 6

## Land Acknowledgement

### 2AC---Land Acknowledgement

#### Land acknowledgement doesn’t change material conditions of dispossession.

Small 20 (Alex, professor of physics at California State Polytechnic University, Pomona, <https://www.insidehighered.com/views/2020/01/09/why-land-acknowledgments-arent-worth-much-opinion>, DOA: 10-30-2021) //Snowball

I recently attended a scientific talk that opened with a land acknowledgment. The moderator had already mentioned the speaker’s passion for diversity and inclusion during the introductory remarks. In keeping with that passion, the speaker began their presentation by naming and acknowledging the Native American group that had dwelled on the land of our event prior to European conquest.

The speaker clearly intended to show support for Native Americans still suffering from the legacy of conquest. But such statements will hardly improve the group’s material or political conditions, nor did they challenge the views of anyone in the audience.

## ADV 1

### 2AC---AT Walt

#### Walt is unsure at best- he says short term conflicts unlikely not long term economic decline

1NC Walt ‘20

Kansas reads blue

(Robert and Renée Belfer professor of international relations at Harvard University. (Stephen M., 5/13/20, “Will a Global Depression Trigger Another World War?”, *Foreign Policy*, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/)

If one takes a longer-term perspective, however, a sustained economic depression could make war more likely by strengthening fascist or xenophobic political movements, fueling protectionism and hypernationalism, and making it more difficult for countries to reach mutually acceptable bargains with each other. The history of the 1930s shows where such trends can lead, although the economic effects of the Depression are hardly the only reason world politics took such a deadly turn in the 1930s. Nationalism, xenophobia, and authoritarian rule were making a comeback well before COVID-19 struck, but the economic misery now occurring in every corner of the world could intensify these trends and leave us in a more war-prone condition when fear of the virus has diminished.

1nc walt starts here

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”   
Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

[NEWSCHOOLS reading ends here]

To be sure, I can’t rule out another powerful cause of war—stupidity—especially when it is so much in evidence in some quarters these days. So there is no guarantee that we won’t see misguided leaders stumbling into another foolish bloodletting. But given that it’s hard to find any rays of sunshine at this particular moment in history, I’m going to hope I’m right about this one.

### 2AC---China Threat

#### Don’t over-analyze China’s behavior---they mean what they say, and their intentions to upend the international system are opaque.

Brands 20, \*Hal Brands is an American scholar of U.S. foreign policy. He is the Henry A. Kissinger Distinguished Professor of Global Affairs at the Johns Hopkins University School of Advanced International Studies and a Resident Scholar at the American Enterprise Institute; (May 20th, 2020, “What Does China Really Want? To Dominate the World”, https://www.bloomberg.com/opinion/articles/2020-05-20/xi-jinping-makes-clear-that-china-s-goal-is-to-dominate-the-world)

Can we pay the Chinese Communist Party the compliment of acknowledging that it means what it says and knows what it wants? That may be the key to understanding Beijing’s strategic ambitions in the coming decades.

A long-standing trope in the U.S. [debate](https://warontherocks.com/2018/12/wotr-podcast-full-steam-ahead-naval-competition-with-china/) on [that](https://warontherocks.com/2019/01/the-party-congress-test-a-minimum-standard-for-analyzing-beijings-intentions/) [subject](https://www.brookings.edu/wp-content/uploads/2018/10/fp_20181018_us_china_transcript.pdf) is that China itself doesn’t know what it seeks to achieve, that its leaders haven’t yet worked out how far Beijing’s influence should reach. Yet there is a growing body of evidence, assembled and interpreted by talented China experts, that the Chinese government is indeed aiming for global power and perhaps global primacy over the next generation — that it seeks to upend the American-led international system and create at least a competing, quasi-world order of its own.

It doesn’t take unparalleled powers of deduction to reach this conclusion. Top Chinese officials and members of the country’s foreign policy community are becoming increasingly explicit in saying so themselves.

President Xi Jinping more than hinted at this goal in his landmark address to the 19th Party Congress in October 2017. That speech represents one of the most authoritative statements of the party’s policy and aims; it reflects Xi’s [understanding](https://twitter.com/PLMattis/status/1259592233726205953) of what China has accomplished under Communist rule and how it must advance in the future.

Xi [declared](http://www.xinhuanet.com/english/download/Xi_Jinping's_report_at_19th_CPC_National_Congress.pdf) that China “has stood up, grown rich, and is becoming strong,” and that it was now “blazing a new trail for other developing countries” and offering “Chinese wisdom and a Chinese approach to solving the problems facing mankind.” By 2049, Xi promised, China would “become a global leader in terms of composite national strength and international influence” and would build a “stable international order” in which China’s “national rejuvenation” could be fully achieved.

This was the statement of a leader who sees his country not just participating in global affairs but setting the terms, and it testifies to two core themes in China’s foreign policy discourse.

The first is a deeply skeptical view of the existing international system. Chinese leaders recognize that the global trade regime has been indispensable to the country’s economic and military rise. Yet when they look at the key features of the world Washington and its allies have made, they see mostly [threats](https://tnsr.org/2018/11/xis-vision-for-transforming-global-governance-a-strategic-challenge-for-washington-and-its-allies/).

In their view, American alliances do not preserve peace and stability; they stunt China’s potential and prevent Asian nations from giving Beijing its due. Seen through that lens, promoting democracy and human rights is neither moral nor benign, but propaganda supporting a dangerous doctrine that threatens to delegitimize the Communist government and energize its domestic enemies. U.S.-led international institutions appear as tools for imposing America’s will on weaker states. The Communist Party recognizes that the liberal international order has brought benefits, [writes](https://www.nbr.org/wp-content/uploads/pdfs/publications/sr83_chinasvision_jan2020.pdf) Nadege Rolland, a senior fellow at the National Bureau of Asian Research, but “the party abhors and dreads” the principles on which it is based.

The second theme is that the international order must change — not a little, but a lot — for China to become fully prosperous and secure. Chinese leaders have, understandably, been somewhat opaque in describing the world they want, but the outlines are becoming easier to discern.

If one studies the statements of Xi and other top officials, China expert Liza Tobin [concludes](https://tnsr.org/2018/11/xis-vision-for-transforming-global-governance-a-strategic-challenge-for-washington-and-its-allies/), what emerges is a vision in which “a global network of partnerships centered on China would replace the U.S. system of treaty alliances” and the world would view Chinese authoritarianism as preferable to Western democracy.

Based on a similar analysis, Rolland [agrees](https://www.nbr.org/wp-content/uploads/pdfs/publications/sr83_chinasvision_jan2020.pdf) that China has “a yearning for partial hegemony,” a loose dominance over large swaths of the global south. When it comes to global governance, still other [examinations](https://www.tabletmag.com/sections/news/articles/china-plans-global-order) [show](https://www.americanprogress.org/issues/security/reports/2019/02/28/466768/mapping-chinas-global-governance-ambitions/), Beijing wants a system in which international institutions buttress rather than batter repressive regimes. Meanwhile, Chinese strategists and academics are talking openly about building a “new China-centric global economic order.”

There is little indication, in any of this, that Beijing’s strategic horizon is limited to the Western Pacific or even Asia. Xi’s [invocation](http://www.xinhuanet.com/english/2019-10/03/c_138445509.htm) of a “community with a shared future for humanity” [indicates](https://warontherocks.com/2019/01/the-party-congress-test-a-minimum-standard-for-analyzing-beijings-intentions/) a [global](https://tnsr.org/2018/11/xis-vision-for-transforming-global-governance-a-strategic-challenge-for-washington-and-its-allies/) tableau for Chinese influence. One hardly has to read between the lines to understand that this agenda will require fundamentally resetting the current geopolitical balance. As Xi remarked several years ago, China must work resolutely toward “a future where we will win the initiative and have the dominant position.”

Of course, there’s not need to take literally everything national leaders say, or even everything that makes it into official speeches. In Beijing’s case, however, Chinese leaders are actually saying less than what the country is doing.

Whether it is the naval shipbuilding program that is churning out vessels at astonishing rate; the drive to [control](https://www.bloomberg.com/opinion/articles/2020-03-31/china-s-influence-operation-goes-beyond-who-taiwan-and-covid-19) existing international organizations and build new ones; the projection of military power in the [Arctic](https://www.cambridge.org/core/books/china-as-a-polar-great-power/22493FFC041E6739DAED329CCB71F688#fndtn-information), the Indian Ocean and points beyond; the quest to [dominate](https://www.pbs.org/wgbh/frontline/article/made-in-china-2025-the-industrial-plan-that-china-doesnt-want-anyone-talking-about/) the world’s high-tech industries; the ever-more [systematic](https://halbrands.org/wp-content/uploads/2018/09/60-5-07-Brands.pdf) efforts to support authoritarian regimes and weaken democratic institutions; or the Belt and Road Initiative that [encompasses](https://tnsr.org/2019/07/unlocking-the-gates-of-eurasia-chinas-belt-and-road-initiative-and-its-implications-for-u-s-grand-strategy/) multiple continents, China is hardly acting like a country that lacks a grand geopolitical design.

As with so many aspects of the U.S.-China competition, there is a Cold War parallel. During the 1970s, some leading American Sovietologists insisted that Moscow was becoming a satisfied, status quo power. Yet that claim required ignoring what Soviet leaders [said](https://www.google.com/books/edition/What_Good_Is_Grand_Strategy/nGqoAgAAQBAJ?hl=en&gbpv=1&bsq=%22we%20make%20no%20secret%22) about detente and peaceful coexistence — that it was a way of ensuring the triumph of socialism without war — as well as their efforts to build military superiority and positions of strength in the Third World. The warning signs were evident then, as they are today.

China probably doesn’t have a step-by-step checklist for achieving global primacy, any more than the Soviet Union did in the 1970s. Chinese leaders aren’t insensitive to costs and obstacles: Xi may ritualistically restate the importance of unifying the Chinese nation, but that [doesn’t mean](https://twitter.com/resplinodell/status/1259883799254634498) he’s hell-bent on war over Taiwan.

Beijing may not even have decided which of its two paths to global influence is preferable: Establishing dominance in the Western Pacific and then expanding outward from there, or outflanking the U.S. position in the region by building up economic and political power around the world. Finally, China may ultimately fail to accomplish any of this. Perhaps the coronavirus will so weaken the U.S. and the liberal order that China’s ascent will be accelerated. Or perhaps China will run into so many internal problems, and so much external resistance, that its drive will stall.

Yet we ought to recognize that the debate about what China wants is growing stale, because China’s leaders and behavior have increasingly answered that question. When a proud and powerful challenger starts to advertise its global ambitions, Americans should probably err on the side of taking those ambitious seriously.

## T---Specify Core Antitrust

### 2AC---Specify Core Antitrust

#### 2---the plan increases the scope of the Sherman Act.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf)

Antitrust enforcement aimed only at SEP holders is not sufficient to prevent or remedy ex post opportunism. First, as described in Part I, that kind of enforcement must be implemented separately for each patent holder, and for many standards, there are hundreds or even thousands of SEP holders. Second, some of the most common kinds of opportunism are arguably beyond the reach of antitrust claims against SEP holders. 61 Moreover, enforcement aimed at SEP holders is not directed at the basic problem: the failure of the SSOs to take adequate steps to prevent the ex post opportunism that the SSOs’ conduct enabled. There is, therefore, another important role for Section 1 of the Sherman Act to help guard against ex post opportunism by SEP holders—one that the courts have not yet had occasion to recognize. This role is soundly based on well-established Supreme Court precedent regarding the application of Section 1 to activities by SSOs and their members.

#### No circumvention---courts solve.

Cary et al. 08, \*George Cary is a partner in the Washington office of Cleary Gottlieb Steen & Hamilton LLP. He is a former Deputy Director of the Federal Trade Commission's Bureau of Competition and 1976 graduate of the Boalt Hall School of Law at the University of California-Berkeley. \*Larry Work-Dembowski is an associate in the Washington office of Cleary Gottlieb Steen & Hamilton LLP and a 2002 graduate of the Georgetown University Law Center. \*Paul Hayes is an associate in the Washington office of Cleary Gottlieb Steen & Hamilton LLP and a 2001 graduate of the New York University School of Law; (“Antitrust Implications of Abuse of Standard-Setting”, 15 GEO. Mason L. REV. 1241 (2008))

Although evaluation of FRAND commitments and licensing terms can be complex and fact-intensive, there should be no doubt that the courts and enforcement agencies are competent to apply antitrust law to deceptive FRAND commitments. Assessing whether a licensor has complied with its FRAND obligations does not require courts or agencies to make any determinations that they do not already commonly make in antitrust and intellectual property cases. Courts routinely calculate "reasonable royalties" in the patent litigation context 1 ' and compare the "but for" competitive market to the market in which a restraint of competition exists in order to determine damages in the antitrust context. 4 ' In assessing whether a licensor has met its FRAND obligations, a court would engage in similar calculations; it would compare the royalties charged in the ex post market to its assessment of what royalties would have prevailed in the competitive ex ante market.'43 In determining what royalties would have prevailed ex ante, a court would likely consider, among other things, the available alternatives to the technology at issue, the royalties charged to licensees practicing other standards for comparable technologies, and the royalties charged to licensees for comparable technologies in industries where there are no standards or FRAND commitments. Although this may be a demanding task in some cases, it is necessary because the alternative-concluding that FRAND obligations cannot be defined or enforced by the courts-would render FRAND obligations meaningless, would allow unfettered exercise of monopoly power by essential patent holders, and would cause debilitating un- certainty in the standard-setting process.

## K---Capitalism

### 2AC---Util (AT Ethics)

#### Weigh impacts using expected value, or magnitude times probability---it’s the only to ethically account for the underappreciated risk of high-magnitude threats.

Harris 17, \*John Harris is Politico’s editor-in-chief and author of The Survivor: Bill Clinton in the White House; \*Bryan Bender is Politico’s national security editor and author of You Are Not Forgotten. Both Harris and Bender covered the Pentagon during the tenure of Secretary of Defense William J. Perry; (January 6th, 2017, “Bill Perry Is Terrified. Why Aren’t You?”, https://www.politico.com/magazine/story/2017/01/william-perry-nuclear-weapons-proliferation-214604/)

And there’s one other difference from the Cold War: Americans no longer think about the threat every day.

Nuclear war isn’t the subtext of popular movies, or novels; disarmament has fallen far from the top of the policy priority list. The largest upcoming generation, the millennials, were raised in a time when the problem felt largely solved, and it’s easy for them to imagine it’s still quietly fading into history. The problem is, it’s no longer fading. “Today, the danger of some sort of a nuclear catastrophe is greater than it was during the Cold War,” Perry said in an interview in his Stanford office, “and most people are blissfully unaware of this danger.”

It is a turn of events that has an old man newly obsessed with a question: Why isn’t everyone as terrified as he is?

Perry’s hypothesis for the disconnect is that much of the population, especially that rising portion with no clear memories of the first Cold War, is suffering from a deficit of comprehension. Even a single nuclear explosion in a major city would represent an abrupt and possibly irreversible turn in modern life, upending the global economy, forcing every open society to suspend traditional liberties and remake itself into a security state. “The political, economic and social consequences are beyond what people understand,” Perry says. And yet many people place this scenario in roughly the same category as the meteor strike that supposedly wiped out the dinosaurs—frightening, to be sure, but something of an abstraction.

So Perry regards his last great contribution of a 65-year career as a crusade to stimulate the public imagination—to share the vivid details of his own nightmares. He is doing so in a recent memoir, in a busy public speaking schedule, in half-empty hearing rooms on Capitol Hill, and increasingly with an online presence aimed especially at young people. He has enlisted the help of his 28-year-old granddaughter to figure out how to engage a new generation, including [through a series of virtual lectures](https://lagunita.stanford.edu/courses/course-v1:Engineering+NuclearBrink+Fall2016/about) known as a MOOC, or massive open online course. He is eagerly signing up for “Ask Me Anything” chats on Reddit, in which some people still confuse him with William “The Refrigerator” Perry of NFL fame. He posts his ruminations on YouTube, where they give Katy Perry no run for her money, even as the most popular are closing in on 100,000 views. One of the nightmare scenarios Perry invokes most often is designed to roust policymakers who live and work in the nation’s capital. The terrorists would need enriched uranium. Due to the elaborate and highly industrial nature of production, hard to conceal from surveillance, fissile material is still hard to come by—but, alas, far from impossible. Once it is procured, with help from conspirators in a poorly secured overseas commercial power centrifuge facility, the rest of the plot as Perry imagines it is no great technological or logistical feat. The mechanics of building a crude nuclear device are easily within the reach of well-educated and well-funded militants. The crate would arrive at Dulles International Airport, disguised as agricultural freight. The truck bomb that detonates on Pennsylvania Avenue between the White House and Capitol instantly kills the president, vice president, House speaker, and 80,000 others. Where exactly is your office? Your house? And then, as Perry spins it forward, how credible would you find the warnings, soon delivered to news networks, that five more bombs are set to explode in unnamed U.S. cities, once a week for the next month, unless all U.S. military personnel overseas are withdrawn immediately? If this particular scenario does not resonate with you, Perry can easily rattle off a long roster of others—a regional war that escalates into a nuclear exchange, a miscalculation between Moscow and Washington, a computer glitch at the exact wrong moment. They are all ilks of the same theme—the dimly understood threat that the science of the 20th century is set to collide with the destructive passions of the 21st. “We’re going back to the kind of dangers we had during the Cold War,” Perry said. “I really thought in 1990, 1991, 1992, that we left those behind us. We’re starting to re-invent them. We and the Russians and others don’t understand that what we’re doing is re-creating those dangers—or maybe they don’t remember the dangers. For younger people, they didn’t live through those dangers. But when you live through a Cuban Missile Crisis up close and you live through a false alarm up close, you do understand how dangerous it is, and you believe you should do everything you could possibly do to [avoid] going back.” For people who follow the national security priesthood, the dire scenarios are all the more alarming for who is delivering them. Through his long years in government Perry invariably impressed colleagues as the calmest person in the room, relentlessly rational, such that people who did not know him well—his love of music and literature and travel—regarded his as a purely analytical mind, emotion subordinated to logic and duty. Starting in the 1950s as a technology executive and entrepreneur in some of the most secretive precincts of the defense industry, he gradually took on a series of high-level government assignments that gave him one of the most quietly influential careers of the Cold War and its aftermath. Fifteen years before serving as Bill Clinton’s secretary of defense, Perry was the Pentagon official in charge of weapons research during the Carter administration. It was from this perch that he may have had his most far-reaching impact, and left him in some circles as a legendary figure. He used his office to give an essential push to two ideas that transformed warfare over the next generation decisively to American advantage. One idea was stealth technology, which allowed U.S. warplanes to fly over enemy territory undetected. The other was precision-guided munitions, which allowed U.S. bombs to land with near-perfect accuracy. During the Clinton years, Perry so prized his privacy that he initially turned down the job of Defense secretary—changing his mind only after Clinton and Al Gore pleaded with him that the news media scrutiny wouldn’t be so bad. The reputation he built over a life in the public sphere is starkly at odds with this latest highly impassioned chapter of Perry’s career. Harold Brown, who also is 89, first recruited Perry into government, and was Perry’s boss while serving as Defense secretary in the Carter years. “No one would have thought of Bill Perry as a crusader,” he says. “But he is on a crusade.” Lee Perry, his wife of nearly 70 years, is living in an elder care facility, her once buoyant presence now lost to dementia. Perry himself, lucid as ever, has seen his physical frame become frail and stooped. Rather than slowing his schedule, he has accelerated his travels to plead with people to awaken to the danger. A trip to Washington includes a dinner with national security reporters and testimony on Capitol Hill. Back home in California, he’s at the Google campus to prod engineers to contemplate that their world may not last long enough for their dreams of technology riches to come true. He’s created an advocacy group, [the William J. Perry project](http://www.wjperryproject.org/), devoted to public education about nuclear weapons. He’s enlisted both his granddaughter and his 64-year-old daughter, Robin Perry, in the cause. But if his profile is rising, his style is essentially unchanged. He is a man known for self-effacement, trying to shape an era known for relentless self-promotion, a voice of quiet precision in a time of devil-take-the-hindmost bombast. The rational approach to problem-solving that propelled his career and won him adherents and friends in both political parties and even among some of America’s erstwhile enemies remains his guide—in this case, by endeavoring to calculate the possibilities and probabilities of a terrorist attack, regional nuclear war, or horrible miscalculation with Russia. “I want to be very clear,” he said. “I do not think it is a probability this year or next year or anytime in the foreseeable future. But the consequence is so great, we have to take it seriously. And there are things to greatly lower those possibilities that we’re simply not doing.” \*\*\* Perry really did not expect he would have to write this chapter of his public life. His official career closed with what seemed then an unambiguous sense of mission accomplished. By the time he arrived in the Pentagon’s top job in 1994, the Cold War was over, and the main item on the nuclear agenda seemed to be cleaning up no-longer-needed arsenals. As defense secretary, Perry stood with his Russian counterpart, Pavel Grachev, as they jointly blew up missile silos in the former Soviet Union and tilled sunflower seeds in the dirt. “I finally thought by the end of the ‘80s we lived through this horrible experience and it’s behind us,” Perry said. “When I was secretary, I fully believed it was behind us.” After leaving the Pentagon, he accepted an assignment from Clinton to negotiate an end to North Korea’s nuclear development program—and seemed agonizingly close to a breakthrough as the last days of the president’s term expired. Now, he sees his grandchildren inheriting a planet possibly more dangerous than it was during his public career. No one could doubt that the Sept. 11 terrorists would have gladly used nuclear bombs instead of airplanes if they had had them, and it seems only a matter of time until they try. Instead of a retreating threat in North Korea, that fanatical regime now possesses as many as eight nuclear bombs, and is just one member of a growing nuclear club. Far from a new partnership with Russia, Vladimir Putin has given old antagonisms a malevolent new face. American policymakers talk of spending up to $1 trillion to modernize the nuclear arsenal. And now comes Donald Trump with a long trail of statements effectively shrugging his shoulders about a world newly bristling with bombs and people with reasons to use them. Perry knew Hillary Clinton well professionally, and says he admired both her and Bill Clinton for their professional judgment though he was never a personal intimate of either. He was prescient before the election in expressing skepticism about how voters would respond to the dynastic premise of the Clinton campaign—a healthy democracy should grow new voices—but was as surprised as everyone else on Election Day. Donald Trump was not the voice he was looking for, to put it mildly, but he has responded to the Trump cyclone with modulated restraint. Perry said he assumes his most truculent rhetoric isn’t serious, the utterances of a man who assumed his words were for political effect only and had no real consequences. Now that they do, Perry is hoping to serve as a kind of ambassador to rationality. He said he is hoping for audiences soon, with Trump if the incoming president will see him, and certainly Trump’s national security team, which includes several people Perry knows, including Defense Secretary nominee James Mattis. There is little doubt the message if the meeting comes. “We are starting a new Cold War,” he says. “We seem to be sleepwalking into this new nuclear arms race. … We and the Russians and others don’t understand what we are doing.” “I am not suggesting that this Cold War and this arms race is identical to the old one,” Perry added. “But in many ways, it is just as bad, just as dangerous. And totally unnecessary.” \*\*\* Perry had been brooding over the question for a year. It was in the early 1950s, he was still in his 20s, and the subject was partial differential equations—the topic of his Ph.D. thesis. A particular problem had been absorbing him, day in and day out, hours and hours on end. Then, out of nowhere, a light came on. Math for Perry represented analytical discipline, a way of achieving mastery not only over numerical problems but any hard problem, by breaking it down into essential parts, distilling complexity into simplicity. | Photo via the William J. Perry Project “I woke up in the middle of the night, and it was all there,” Perry recalled. “It was all there, and I got out of bed and sat down. The next two or three hours, I wrote my thesis, and from the first word I wrote down, I never doubted what the last word was going to be: It was a magic moment.” The story is a reminder of something definitional about Bill Perry. Before he became in recent years an apostle of disarmament, before he sat atop the nation’s war-making apparatus in the 1990s, before he was the executive of a defense contractor specializing in the most complex arenas of Cold War surveillance in the 1960s, he was a young man in love with mathematics. In those days, Perry had planned on a career as a math professor. His attraction to math was not merely practical, in the way that engineers or architects rely on math. The appeal was just as much aesthetic, in ways that people who are not numbers people—political life tends to be dominated by word people—cannot easily comprehend. To Perry’s mind, there was a purity to math, a beauty to the patterns and relationships, that was not unlike music. Math for Perry represented analytical discipline, a way of achieving mastery not only over numerical problems but any hard problem, by breaking it down into essential parts, distilling complexity into simplicity. This trait was why Pentagon reporters in the 1990s liked spending time around Perry. When most public officials are asked a question, one studies the transcript later to decipher a succession of starts and stalls, sentence fragments and ellipses, that cumulatively convey an impressionistic sense of mind but no clear fixed meaning. Perry’s sentences, by contrast, always cut with surgical precision. It was one reason Clinton White House officials often held their breath when he gave interviews—Perry might make news by being clear on subjects, such as ethnic warfare in the Balkans or a nuclear showdown in North Korea, that the West Wing preferred to try to fog over.

“I’ve never been able to attack a policy problem with a mathematical formula,” he recalled, “but I have always believed that the rigorous way of thinking about a problem was good. It separated the fact from the bullshit, and that’s very important sometimes, to separate what you can from what you would hope you can do.”

Just how high is the risk? The answer is ultimately unknowable. Perry’s point, though, is that it’s a hell of a lot higher than you think. | M. Scott Mahaskey/POLITICO

Perry wishes more people were familiar with the concept of “expected value.” That is a statistical way of understanding events of very large magnitude that have a low probability. The large magnitude event could be something good, like winning a lottery ticket. Or it could be something bad, like a nuclear bomb exploding. Because the odds of winning the lottery are so low, the rational thing is to save your money and not buy the ticket. As for a nuclear explosion, by Perry’s lights, the consequences are so grave that the rational thing would be for people in the United States and everywhere to be in a state of peak alarm about their vulnerability, and for political debate to be dominated by discussion of how to reduce the risk.

And just how high is the risk? The answer of course is ultimately unknowable. Perry’s point, though, is that it’s a hell of a lot higher than you think.

Perry invites his listeners to consider all the various scenarios that might lead to a nuclear event. “Mathematically speaking, you add those all together in one year it is still just a possibility, not a probability,” he reckons. “But then you go out ten, twenty years and each time this possibility repeats itself, and then it starts to become a probability. How much time we have to get those possibility numbers lower, I don’t know. But sooner or later the odds are going to get us, I am afraid.”

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Almost uniquely among living Americans, Bill Perry has actually faced down the prospect of nuclear war before—twice. In the fall of 1962, Bill Perry was 35, father of five young children, living in the Bay Area and serving as director of Sylvania’s Electronic Defense Laboratories—driving his station wagon to recitals in between studying missile trajectories and the radius of nuclear detonations. Where he resided was not then called Silicon Valley, but the exuberance and spirit of creative possibility we now associate with the region was already evident. The giants then were Bill Hewlett and David Packard, men Perry deeply admired and wished to emulate in his own business career. The innovation engine at that time, however, was not consumer technology; it was the government’s appetite for advantage in a mortal struggle against a powerful Soviet foe. Perry was known as a star in the highly complex field of weapons surveillance and interpretation. So it was not a surprise, one bright October day, for Perry to get a call from Albert “Bud” Wheelon, a friend at the Central Intelligence Agency. Wheelon said he wanted Perry in Washington for a consultation. Perry said he’d juggle his schedule and be there the next week. “No,” Wheelon responded. “I need to see you right away.” Perry caught the red-eye from San Francisco, and went straight to the CIA, where he was handed photographs whose meaning was instantly clear to him. They were of Soviet missiles stationed in Cuba. For the next couple weeks, Perry would stay up past midnight each evening poring over the latest reconnaissance photos and help write the analysis that senior officials would present the next morning to President Kennedy. Perry experienced the crisis partly as ordinary citizen, hearing Kennedy on television draw an unambiguous line against Soviet missiles in this hemisphere and promising that any attack would be met with “a full retaliatory response.” But he possessed context, about the capabilities of weapons and the daily state of play in the crisis, that gave him a vantage point superior to that of all but perhaps a few dozen people. “I was part of a small team—six or eight people,” he recounted of those days 54 years earlier. “Half of them technical experts, half of them intelligence analysts, or photo interpreters. It was a minor role but I was seeing all the information coming in. I thought every day when I went back to the hotel it was the last day of my life because I knew exactly what nuclear weapons could do. I knew it was not just a lot of people getting killed. It was the end of civilization and I thought it was about to happen.” Left: A January 1963 aerial photo showing that the Soviets had disbanded medium- and intermediate-range ballistic missile sites in Cuba. Right: Soviet freighter Polzunov (top) loaded with nuclear missiles removed from Cuba, is escorted by American destroyer Vesole outside Cuban waters on trek back to Russia near end of Cuban Missile Crisis. | Defense Department; Carl Mydans/The LIFE Picture Collection/Getty Images It was years later that Perry, like other more senior participants in the crisis, learned how right that appraisal was. Nuclear bombs weren’t only heading toward Cuba on Soviet ships, as Kennedy believed and announced to Americans at the time. Some of them were already there, and local commanders had been given authority to use them if Americans launched a preemptive raid on Cuba, as Kennedy was being urged, goaded even, by Air Force Gen. Curtis LeMay and other military commanders. At the same time, Soviet submarines were armed and one commander had been on the verge of launching them until other officers on the vessel talked him out of it. Either event would have in turn sent U.S. missiles flying. The Cuban Missile Crisis recounting is one of the dramatic peaks in “My Journey on the Nuclear Brink,” the memoir Perry published last fall. It is a book laced with other close calls—like November 9, 1979, when Perry was awakened in the middle of the night by a watch officer at the North American Aerospace and Defense Command (NORAD) reporting that his computers showed 200 Soviet missiles in flight toward the United States. For a frozen moment, Perry thought: This is it—This is how it ends. The watch officer soon set him at ease. It was a computer error, and he was calling to see whether Perry, the technology expert, had any explanation. It took a couple days to discover the low-tech answer: Someone had carelessly left a crisis-simulation training tape in the computer. All was well. But what if this blunder had happened in the middle of a real crisis, with leaders in Washington and Moscow already on high alert? The inescapable conclusion was the same as it was in 1962: The world skirting nuclear Armageddon as much by good luck as by skilled crisis management. Perry is part of a distinct cohort in American history, one that didn’t come home with the large-living ethos of the World War II generation, but took responsibility for cleaning up the world that the war bequeathed. He was a 14-year-old in Butler, Pennsylvania when he heard the news of the Pearl Harbor attack in a friend’s living room, and had the disappointed realization that the war might be over by the time he was old enough to fight in it. That turned out to be true—he was just shy of 18 at war’s end—a fact that places Perry in what demographers have called the “Silent Generation,” too young for one war but already middle-aged by the time college campuses erupted over Vietnam. Like many in his generation, Perry was not so much silent as deeply dutiful, with an understated style that served as a genial, dry-witted exterior to a life in which success was defined by how faithfully one met his responsibilities. Perry said he became aware, first gradually and over time profoundly, of the surreal contradictions of his professional life. His work—first at Sylvania and then at ESL, a highly successful defense contracting firm he co-founded in 1963—was relentlessly logical, analyzing Soviet threats and intentions and coming up with rational responses to deter them. But each rational move was part of a supremely irrational dynamic—“mutually assured destruction”—that placed the threat of massive casualties at the heart of America’s basic strategic thinking. It was the kind of framework in which policymakers could accept that a mere 25 million people dead was good news. Also the kind that in one year alone led the United States to produce 8,000 nuclear bombs. By the end, the Cold War left the planet with about 70,000 bombs ([a total that](https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat) is now down to about 15,500). “I think probably everybody who was involved in nuclear weapons in those days would see the two sides of it,” Perry recalls, “the logic of deterrence and the madness of deterrence, and there was no mistake, I think, that the acronym was MAD.” \*\*\* Perry has been at the forefront of a movement that he considers the sane and only alternative, and he has joined forces with other leading Cold Warriors who in another era would likely have derided their vision as naïve. In January 2007, he was a co-author of a remarkable commentary that ran on the op-ed page of the Wall Street Journal. It was signed also by two former secretaries of state, George Schulz and Henry Kissinger and by Sam Nunn, a former chairman of the Senate Armed Services Committee—all leading military hawks and foreign policy realists who came together to argue for something radical: that the goal of U.S. policy should be not merely the reduction and control of atomic arms, it should be the ultimate elimination of all nuclear weapons. This sounded like gauzy utopianism, especially bizarre coming from supremely pragmatic men. But Perry and the others always made clear they were describing a long-term ideal, one that would only be achieved through a series of more incremental steps. The vision was stirring enough that it was endorsed by President Obama in his opening weeks in office, in a March 2009 address in Prague. In retrospect, Obama’s speech may have been the high point for the vision of abolition. “A huge amount of progress was made,” recalled Shultz, now 93. “Now it is going in the other direction.” “We have less danger of an all-out war with Russia,” in Nunn’s view. “But we have more danger of some type of accident, miscalculation, cyber interference, a terrorist group getting a nuclear weapon. It requires a lot more attention than world leaders are giving it.” Perry’s goal now is much more defensive than it was just a few years ago—halting what has become inexorable momentum toward reviving Cold War assumptions about the central role of nukes in national security. More recently he’s added yet another recruit to his cause: California Governor Jerry Brown. Brown, now 78, met Perry a year ago, after deciding that he wanted to devote his remaining time in public service mainly to what he sees as civilization’s two existential issues, climate change and nuclear weapons. Brown said he became fixated on spreading Perry’s message after reading his memoir: He recently gave a copy to President Obama and is trying to bend the ear of others with influence in Washington. If Bill Perry has a gift for understatement, Brown has a gift for the theatrical. In an interview at the governor’s mansion in Sacramento, he wonders why everyone is not paying attention to his new friend and his warnings for mankind. “He is at the brink! At the brink! Not WAS at the brink—IS at the brink,” Brown exclaimed. “But no one else is.” A California governor can have more influence, at least indirectly, than one might think, due to the state’s outsized role in policy debates and the fact that the University of California’s Board of Regents helps manage some of the nation’s top weapons laboratories, which study and design nuclear weapons. Brown, who was a vocal critic in the 1980s of what he called America's "nuclear addiction," reviewed Perry's recent memoir in the New York Review of Books, and said he is determined to help his new friend spread his message. “Everybody is, 'we are not at the brink,' and we have this guy Perry who says we are. It is the thesis that is being ignored." Even if more influential people wake up to Perry’s message—a nuclear event is more likely and will be more terrible than you realize—a hard questions remains: Now what? This is where Perry’s pragmatism comes back into play. The smartest move, he thinks, is to eliminate the riskiest part of the system. If we can’t eliminate all nukes, Perry argues, we could at least eliminate one leg of the so-called nuclear triad, intercontinental ballistic missiles. These are especially prone to an accidental nuclear war, if they are launched by accident or due to miscalculation by a leader operating with only minutes to spare. Nuclear weapons carried by submarines beneath the sea or aboard bomber planes, he argues, are logically more than enough to deter Russia.

The problem, he knows, is that logic is not necessarily the prevailing force in political debates. Psychology is, and this seems to be dictating not merely that we deter a Russian military force that is modernizing its weapons but that we have a force that is self-evidently superior to them.

It is an argument that strikes Perry as drearily familiar to the old days. Which leads him the conclusion that the only long-term way out is to persuade a younger generation to make a different choice.

His granddaughter, Lisa Perry, is precisely in the cohort he needs to reach. At first she had some uncomfortable news for her grandfather: Not many in her generation thought much about the issue.

“The more I learned from him about nuclear weapons the more concerned I was that my generation had this massive and dangerous blind spot in our understanding of the world,” she said in an interview. “Nuclear weapons are the biggest public health issue I can think of.”

But she has not lost hope that their efforts can make a difference, and today she has put her graduate studies in public health on hold to work full time for the Perry Project as its social media and web manager. “It can be easy to get discouraged about being able to do anything to change our course,” she said. “But the good news is that nuclear weapons are actually something that we as humans can control...but first we need to start the conversation.”

It was with her help that Perry went on Reddit to [field questions](https://www.reddit.com/r/IAmA/comments/4a0ga4/iam_william_j_perry_former_secretary_of_defense/) ranging from how his PhD in mathematics prepared him to what young people need to understand.

“As a 90s baby I never lived in the Cold War era,” wrote one participant, with the Reddit username BobinForApples. “What is one thing today's generations will never understand about life during the Cold War?”

Perry answered, as SecDef19: “Because you were born in the 1990s, you did not experience the daily terror of ‘duck and cover’ drills as my children did. Therefore the appropriate fear of nuclear weapons is not part of your heritage, but the danger is just as real now as it was then. It will be up to your generation to develop the policies to deal with the deadly nuclear legacy that is still very much with us.”

For the former defense secretary, the task now is to finally—belatedly—prove Einstein wrong. The physicist said in 1946: “The unleashed power of the atom has changed everything save our modes of thinking and we thus drift toward unparalleled catastrophe.”

In Perry’s view the only way to avoid it is by directly contemplating catastrophe—and doing so face to face with the world’s largest nuclear power, Russia, as he recently did in a forum in Luxembourg with several like-minded Russians he says are brave enough to speak out about nuclear dangers in the era of Putin.

### 2AC---Extinction

#### Extinction is worth avoiding---it’s unwanted and causes immense pain.

Finneron 17 – PhD, faculty University of Warwick, Politics & International Studies, Coventry, UK (Elizabeth Finneron-Burns, “What’s wrong with human extinction?,” *Canadian Journal of Philosophy*, 47.2)

2.3. Existing people would endure physical pain and/or painful and/or premature deaths

Thinking about the ways in which human extinction might come about brings to the fore two more reasons it might be wrong. It could, for example, occur if all humans (or at least the critical number needed to be unable to replenish the population, leading to eventual extinction) underwent a sterilization procedure. Or perhaps it could come about due to anthropogenic climate change or a massive asteroid hitting the Earth and wiping out the species in the same way it did the dinosaurs millions of years ago. Each of these scenarios would involve significant physical and/or non-physical harms to existing people and their interests. Physically, people might suffer premature and possibly also painful deaths, for example. It is not hard to imagine examples in which the process of extinction could cause premature death. A nuclear winter that killed everyone or even just every woman under the age of 50 is a clear example of such a case. Obviously, some types of premature death themselves cannot be reasons to reject a principle. Every person dies eventually, sometimes earlier than the standard expected lifespan due to accidents or causes like spontaneously occurring incurable cancers. A cause such as disease is not a moral agent and therefore it cannot be wrong if it unavoidably kills a person prematurely. Scanlon says that the fact that a principle would reduce a person’s well-being gives that person a reason to reject the principle: ‘components of well-being figure prominently as grounds for reasonable rejection’ (Scanlon 1998, 214). However, it is not settled yet whether premature death is a setback to well-being. Some philosophers hold that death is a harm to the person who dies, whilst others argue that it is not.7 I will argue, however, that regardless of who is correct in that debate, being caused to die prematurely can be reason to reject a principle when it fails to show respect to the person as a rational agent. Scanlon says that recognizing others as rational beings with interests involves seeing reason to preserve life and prevent death: ‘appreciating the value of human life is primarily a matter of seeing human lives as something to be respected, where this involves seeing reasons not to destroy them, reasons to protect them, and reasons to want them to go well’ (Scanlon 1998, 104). The ‘respect for life’ in this case is a respect for the person living, not respect for human life in the abstract. This means that we can sometimes fail to protect human life without acting wrongfully if we still respect the person living. Scanlon gives the example of a person who faces a life of unending and extreme pain such that she wishes to end it by committing suicide. Scanlon does not think that the suicidal person shows a lack of respect for her own life by seeking to end it because the person whose life it is has no reason to want it to go on. This is important to note because it emphasizes the fact that the respect for human life is person-affecting. It is not wrong to murder because of the impersonal disvalue of death in general, but because taking someone’s life without their permission shows disrespect to that person. This supports its inclusion as a reason in the contractualist formula, regardless of what side ends up winning the ‘is death a harm?’ debate because even if death turns out not to harm the person who died, ending their life without their consent shows disrespect to that person. A person who could reject a principle permitting another to cause his or her premature death presumably does not wish to die at that time, or in that manner. Thus, if they are killed without their consent, their interests have not been taken into account, and they have a reason to reject the principle that allowed their premature death.8 This is as true in the case of death due to extinction as it is for death due to murder. However, physical pain may also be caused to existing people without killing them, but still resulting in human extinction. Imagine, for example, surgically removing everyone’s reproductive organs in order to prevent the creation of any future people. Another example could be a nuclear bomb that did not kill anyone, but did painfully render them infertile through illness or injury. These would be cases in which physical pain (through surgery or bombs) was inflicted on existing people and the extinction came about as a result of the painful incident rather than through death. Furthermore, one could imagine a situation in which a bomb (for example) killed enough people to cause extinction, but some people remained alive, but in terrible pain from injuries. It seems uncontroversial that the infliction of physical pain could be a reason to reject a principle. Although Scanlon says that an impact on well-being is not the only reason to reject principles, it plays a significant role, and indeed, most principles are likely to be rejected due to a negative impact on a person’s well-being, physical or otherwise. It may be queried here whether it is actually the involuntariness of the pain that is grounds for reasonable rejection rather than the physical pain itself because not all pain that a person suffers is involuntary. One can imagine acts that can cause physical pain that are not rejectable — base jumping or life-saving or improving surgery, for example. On the other hand, pushing someone off a cliff or cutting him with a scalpel against his will are clearly rejectable acts. The difference between the two cases is that in the former, the person having the pain inflicted has consented to that pain or risk of pain. My view is that they cannot be separated in these cases and it is involuntary physical pain that is the grounds for reasonable rejection. Thus, the fact that a principle would allow unwanted physical harm gives a person who would be subjected to that harm a reason to reject the principle.

### 2AC---AT Warming

#### Yes decoupling – study

Pao 18 (Hsiao-Tien Pao, PhD, Department of Management Science, National Chiao Tung University; Chun-Chih Chen, PhD, Department of Management Science, National Chiao Tung University; “Decoupling strategies: CO emissions, energy resources, and economic growth in 2 the Group of Twenty”, Journal of Cleaner Production, September 2018, DOI: 10.1016/j.jclepro.2018.09.190) \*Brackets added which provide the full version of each of these abbreviations: Hydro = hydropower; CKC = carbon kuznets curve; Ren = new renewable energy consumption; FF = fossil fuels energy consumption; 3Es = environment, energy, and economy, Nuc = nuclear energy consumption, TCE = total clean energy consumption, EG = economic growth

This study selects the G20 as a representative sample of global economic development to assess the CKC [carbon Kuznets curve], the 3Es dynamics, substitutability between Ren [new renewable energy consumption]/Hydro [hydropower] /Nuc [nuclear energy consumption] and FF [fossil fuels energy consumption], and thus to propose decoupling strategies for sustainable development. We extend the literature on the emission-growth nexus in the case of G20 to the 3Es dynamics by examining the rule of Ren [new renewable energy consumption]/Hydro [hydropower] /Nuc [nuclear energy consumption] and FF [fossil fuels energy consumption]. The descriptive statistical analysis suggests the absolute decoupling effect seems to have occurred with the drop in related environmental pressure and the continuation of economic growth. Within a panel EEO model framework, the per capita TCE [total clean energy consumption] /FF [fossil fuels energy consumption] elasticity of demand for carbon emissions is -0.021/1.04. The existence of the CKC [carbon kuznets curve] is consistent with the results of the descriptive statistical analysis. The results of panel VECM models support the Hydroled and Nuc-led growth hypotheses and the feedback hypothesis between EG [economic growth] and Ren [new renewable energy consumption]/FF and suggest the potential substitutability/symbiosis between Ren/Hydro and FF as evidenced by the negative/positive bidirectional causal relationship between them. Also, note that the use of nuclear energy is a key means of dealing with carbon emissions as evidenced by the positive unidirectional causal relationship running from emissions to Nuc [nuclear energy consumption].

Based on the growing global awareness of environmental protection, these interdependencies between 3Es are not surprising. That provides the main directions of each in the design of energy and energy conservation policies to ensure a diversified, sustainable energy consumption mix and a decoupling of environmental pressure from EG [economic growth]. Policymakers can introduce a wide range of complementary strategies for renewable energy and nuclear energy to improve energy efficiency and safety, reduce CO2 intensity, maintain stable economic growth, and implement the 2030 sustainable development agenda, thus lead the world to absolute decoupling. Absolute decoupling is the only way to achieve a truly sustainable future.

#### Clean disruption solves – zero-emissions by 2030.

Seba 14 - MBA @ Stanford, lecturer in distribution and clean energy @ Stanford (Tony, “Clean Disruption of energy and transportation: How silicon valley will make oil, nuclear, natural gas, coal, electric utilities and conventional cars obsolete by 2030,” pg. 2-17)

The Stone Age did not end because humankind ran out of stones. It ended because rocks were disrupted by a superior technology: bronze. Stones didn't just disappear. They just became obsolete for tool-making purposes in the Bronze Age. The horse and carriage era did not end because we ran out of horses. It ended because horse transportation was disrupted by a superior technology, the internal combustion engine, and a new, disruptive 20th century business model. Horses didn't just disappear. They became obso ete for the purposes of mass transportation. The age of centralized, command-and-control, extraction-resource-based energy sources (oil, gas, coal and nuclear) will not end because we run out of petroleum, natural gas, coal, or uranium. It will end because these energy sources, the business models they employ, and the products that sustain them will be disrupted by superior technologies, product architectures, and business models. Compelling new technologies such as solar, wind, electric vehicles, and autonomous (self-driving) cars will disrupt and sweep away the energy industry as we know it. The same Silicon Valley ecosystem that created bit-based technologies that have disrupted atom-based industries is now creating bit- and electron-based technologies that will disrupt atom-based energy industries.

Clean Disruption of Energy and Transportation.

The industrial era of energy and transportation is giving way to an information technology and knowledge-based energy and transportation era. The combination of bit-based and electron-based technologies will put an end to conventional atom-based energy and transportation industries. The disruption will be a clean one and have the following characteristics:

1. Technology-based disruption.

The clean disruption is about digital (bit) and clean energy (electron) technologies disrupting resource-based (atom-based) industries. Clean energy (solar and wind) is free. Clean transportation is electric and uses clean energy derived from the sun and wind. The key to the disruption of energy lies in the exponential cost and performance improvement of technologies that convert, manage, store, and share clean energy. The clean disruption is also about software and business model innovation.

2. Flipping the architecture of energy.

Just as the Internet and the cell phone turned the architecture of information upside-down, the clean disruption will create an energy architecture that is different from the one we know today. The new energy architecture will be distributed, mobile, intelligent, and participatory. It will overturn the existing energy architecture, which is centralized, command-and-control oriented, secretive, and extractive. The conventional energy model is about Big Banks financing Big Energy to build Big Power Plants or refineries in a few selected places. The new architecture is about everyone financing everyone to build smaller, distributed power plants everywhere.

3. Abundant, cheap, and participatory energy.

The clean disruption will be about abundant, cheap, and participatory energy. The existing energy business model is based on scarcity, depletion, and command-and-control monopolies. The clean disruption is similar to the information technology revolution that overturned the old publishing and information model and made information abundant, participatory, and essentially free.

4. Clean disruption is inevitable.

The clean disruption of energy and transportation is inevitable when you consider the exponential cost improvement of disrupting technologies; the creation of new business models; the democratization of generation, finance, and access; and the exponential market growth.

5. Clean disruption will be swift.

It will be over by 2030. Maybe before. Oil, natural gas (methane), coal, and uranium will simply become obsolete for the purposes of generating significant amounts of electricity and powering the automobile. These energy sources will still have uses. For example, uranium will be used to make nuclear weapons and natural gas will be used for cooking and producing fertilizer. Obsolescence and clean disruption will not put an end to incumbent industries. We still have vinyl records, sailboats and jukeboxes. These niche market products will survive, but energy and transportation will not be the multi-trillion dollar energy heavyweights that they are today.

In twenty years we'll wonder how we put up with the horrendous consequences of the incumbent, conventional, $8 trillion-a-year energy industry. If Nikola Tesla and Thomas Alva Edison rose from the dead, they would recognize the industry that they helped build a century ago and they would be disappointed at how little it has changed. Today's versions of Tesla and Edison are creating technologies, products, and business models that will dismantle the extractive, centralized, dirty- energy age in which we live. The first wave of energy disruption has already begun with distributed solar and wind generation. It won't be long before the next wave crashes over the remains of the first one. Transportation is a $4 trillion industry globally. The transportation industry is inextricably linked with energy. As this book explains, the internal combustion engine automobile will soon be disrupted, an event which will, in turn, send disruptive shockwaves through the oil industry. The first wave of disruption of the century-old automotive industry is well underway with electric vehicles. The second disruptive wave, the self-driving car, will hit before the first wave is finished crashing. Transportation will never be the same again. This book is about how a new technology-based infrastructure and a set of products and services governed by the economics that have made Silicon Valley a source of market disruption over the last generation will disrupt energy industries that have barely evolved over the past hundred years.

#### Capitalism is good and sustainable---technological progress has successfully dematerialized economic growth.

McAfee 19, \*Andrew Paul McAfee, a principal research scientist at MIT, is cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management; (2019, “More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources and What Happens Next”, https://b-ok.cc/book/5327561/8acdbe)

Capitalism and technological progress are the first pair of forces driving dematerialization. This statement will come as a surprise to many, and for good reason. After all, it’s exactly this combination that caused us to massively increase our resource consumption throughout the Industrial Era. As we saw in chapter 3, the ideas of William Jevons and Alfred Marshall point to the distressing conclusion that capitalism and tech progress always lead to more from more: more economic growth, but also more resource consumption. So what changed? How are capitalism and tech progress now get ting us more from less ? To get answers to these important questions, let’s start by looking at a few recent examples of dematerialization. Fertile Farms America has long been an agricultural juggernaut. In 1982, after more than a decade of steady expansion due in part to rising grain prices, total cropland in the country stood at approximately 380 million acres. Over the next ten years, however, almost all of this increase was reversed. So much acreage was abandoned by farmers and given back to nature that cropland in 1992 was almost back to where it had been almost twenty-five years before. This decline had several causes, including falling grain prices, a severe recession, over-indebted farmers, and increased international competition. A final factor, though, was the ability to get ever-more corn, wheat, soybeans, and other crops from the same acre of land, pound of fertilizer and pesticide, and gallon of water. The material productivity of agriculture in the United States has improved dramatically in recent decades, as we saw in chapter 5. Between 1982 and 2015 over 45 million acres—an amount of cropland equal in size to the state of Washington—was returned to nature. Over the same time potassium, phosphate, and nitrogen (the three main fertilizers) all saw declines in absolute use. Meanwhile, the total tonnage of crops produced in the country increased by more than 35 percent. As impressive as this is, it’s dwarfed by the productivity improvements of American dairy cows. In 1950 we got 117 billion pounds of milk from 22 million cows. In 2015 we got 209 billion pounds from just 9 million animals. The average milk cow’s productivity thus improved by over 330 percent during that time. Thin Cans Tin cans are actually made of steel coated with a thin layer of tin to improve corrosion resistance. They’ve been used since the nineteenth century to store food. Starting in the 1930s, they began also to be used to hold beer and soft drinks. In 1959 Coors pioneered beer cans made of aluminum, which is much lighter and more corrosion resistant than steel. Royal Crown Cola followed suit for soda five years later. As Vaclav Smil relates, “A decade later steel cans were on the way out, and none of them have been used for beer since 1994 and for soft drinks since 1996.… At 85 g the first aluminum cans were surprisingly heavy; by 1972 the weight of a two-piece can dropped to just below 21 g, by 1988 it was less than 16 g, a decade later it averaged 13.6 g, and by 2011 it was reduced to 12.75 g.” Manufacturers accomplished these reductions by making aluminum cans’ walls thinner, and by making the sides and bottom from a single sheet of metal so that only one comparatively heavy seam was needed (to join the top to the rest of the can). Smil points out that if all beverage cans used in 2010 weighed what they did in 1980, they would have required an extra 580,000 tons of aluminum. And aluminum cans kept getting lighter. In 2012 Ball packaging introduced into the European market a 330 ml can that held 7.5 percent less than the US standard, yet at 9.5 g weighed 25 percent less. Gone Gizmos In 2014 Steve Cichon, a “writer, historian, and retired radio newsman in Buffalo, NY,” paid $3 for a large stack of front sections of the Buffalo News newspaper from the early months of 1991. On the back page of the Saturday, February 16, issue was an ad from the electronics retailer Radio Shack. Cichon noticed something striking about the ad: “There are 15 electronic gimzo type items on this page.… 13 of the 15 you now always have in your pocket.” The “gizmo type items” that had vanished into the iPhone Cichon kept in his pocket included a calculator, camcorder, clock radio, mobile telephone, and tape recorder. While the ad didn’t include a compass, camera, barometer, altimeter, accelerometer, or GPS device, these, too, have vanished into the iPhone and other smartphones, as have countless atlases and compact discs. The success of the iPhone was almost totally unanticipated. A November 2007 cover story in Forbes magazine touted that the Finnish mobile phone maker Nokia had over a billion customers around the world and asked, “Can anyone catch the cell phone king?” Yes. Apple sold more than a billion iPhones within a decade of its June 2007 launch and became the most valuable publicly traded company in history. Nokia, meanwhile, sold its mobile phone business to Microsoft in 2013 for $7.2 billion to get “more combined muscle to truly break through with consumers,” as the Finnish company’s CEO Stephen Elop said at the time of the deal. It didn’t work. Microsoft sold what remained of Nokia’s mobile phone business and brand to a subsidiary of the Taiwanese electronics manufacturer Foxconn for $350 million in May of 2016. Radio Shack filed for bankruptcy in 2015, and again in 2017. From Peak Oil to… Peak Oil In 2007 US coal consumption reached a new high of 1,128 million short tons, over 90 percent of which was burned to generate electricity. Total coal use had increased by more than 35 percent since 1990, and the US Energy Information Administration (the official energy statisticians of the US government) forecast further growth of up to 65 percent by 2030. Also in 2007 the US Government Accountability Office (GAO), a federal agency known as “the congressional watchdog,” published a report with an admirably explanatory title: “Crude Oil: Uncertainty about Future Oil Supply Makes It Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production.” It took seriously the idea of “peak oil,” a phrase coined in 1956 by M. King Hubbert, a geologist working for Shell Oil. As originally conceived, peak oil referred to the maximum amount of oil that we could annually produce for all of humanity’s needs. The first oil wells pumped out the crude oil that was closest to the earth’s surface or otherwise easiest to access. As those wells dried up, we had to drill deeper ones, both on land and at sea. As the world’s economies kept growing, so did total demand for oil, which kept getting harder and harder to obtain. Peak oil captured the idea that despite our best efforts and ample incentive, we would come to a time after which we would only be able to extract less and less oil year after year from the earth. Most of the estimates summarized in the GAO report found that peak oil would occur no later than 2040. The report did not mention fracking, which in retrospect looks like a serious omission. Fracking is short for “hydraulic fracturing” and is a means of obtaining oil and natural gas from rock formations lying deep underground. It uses a high-pressure fluid to cause fractures in the rock, through which oil and gas can flow and be extracted. The United States and other countries have long been known to have huge reserves of hydrocarbons in deep rock formations, which are often called shales. Companies had been experimenting with fracking to get at them since the middle of the twentieth century, but had made little progress. In 2000 fracking accounted for just 2 percent of US oil production. That figure began to increase quickly right around the time of the GAO report. Not because of any single breakthrough, but instead because the suite of tools and techniques needed for profitable fracking had all improved enough. A gusher of shale oil and gas ensued. Thanks to fracking, US crude oil production almost doubled between 2007 and 2017, when it approached the benchmark of 10 million barrels per day. By September of 2018 America had surpassed Saudi Arabia to become the world’s largest producer of oil. American natural gas production, which had been essentially flat since the mid-1970s, jumped by nearly 43 percent between 2007 and 2017. As a result of the fracking boom the United States has experienced peak coal rather than peak oil. And the peak in coal is not in total annual supply, but instead in demand. Fracking made natural gas cheap enough that it became preferred over coal for much electricity generation. By 2017 total US coal consumption was down 36 percent from its 2007 high point. The phrase peak oil is still around, but, as is the case with coal, it usually no longer refers to supply. As a 2017 Bloomberg headline put it, “Remember Peak Oil? Demand May Top Out Before Supply Does.” Even though the extra supply from fracking has helped push down oil and gas prices, many observers now believe that energy from other sources—the sun, wind, and the nuclei of uranium atoms—is getting cheaper faster and becoming much more widely available. So much so that, as a 2018 article in Fortune about the future of oil hypothesized, “This wouldn’t be just another oil-price cycle, a familiar roller coaster in which every down is followed by an up. It would be the start of a decades-long decline of the Oil Age itself—an uncharted world in which… oil prices might be ‘lower forever.’ ” Analysts at Shell, the company from which the phrase peak oil originated, now estimate that global peak oil demand might come as soon as 2028. Taking Stock of Rolling Stock My friend Bo Cutter started his career in 1968 working for Northwest Industries, a conglomerate that owned the Chicago and North Western Railway. One of his first assignments was to help a team tasked with solving a problem that sounds odd to modern ears: figuring out where CNW’s railcars were. These cars are massive metal assemblies, each weighing thirty tons or more. In the late 1960s CNW owned thousands of them, representing a huge commitment of both material and money. Across the railroad industry, the rule of thumb then was that about 5 percent of a company’s railcars moved on any given day. This was not because the other 95 percent needed to rest. It was because their owners didn’t know where they were. CNW owned thousands of miles of track in places as far from Chicago as North Dakota and Wyoming. Its rolling stock (as locomotives and railcars are called) could also travel outside the company’s network on tracks owned by other railroads. So these assets could be almost anywhere in the country. When the railcars weren’t moving, they sat in freight yards. At the time Cutter started his job, freight yards didn’t keep up-to-date records of the idle rolling stock they contained because, in the days before widespread digital computers, sensors, and networks, there was no way to cost-effectively know or communicate the location of each car. So it was impossible for CNW or any other railroad to systematically track its most important inventory, even though doing so would be hugely beneficial to the company’s bottom line. For example, Cutter’s team knew that if they could increase the percentage of cars moving each day from 5 percent to 10 percent, they would need only half as many of them. Even a single percentage point increase in freight-car use would yield major financial benefits. When Cutter started his assignment, CNW and all other railroads employed spotters, who visited yards and watched trains pass, then telegraphed their findings to the head office. Other railroads passed on similar information to collect the demurrage charges they were owed for each CNW car on their tracks and in their yards. Cutter’s team improved on these methods by making them more systematic and efficient. They put in place a better baseline audit of where railcars were, employed more spotters, painted CNW cars differently so they were easier to see, and explored how to make more use of a new tool for businesses: the digital computer. That tool and its kin are now pervasive in the railroad industry. In the early 1990s, for example, companies started putting radio-frequency identification tags on each piece of rolling stock. These tags would be read by trackside sensors, thus automating the work of spotting. At present over 5 million messages about railcar status and location are generated and sent throughout the American railway system every day, and the country’s more than 450 railroads have nearly real-time visibility over all their rolling stock. The Rare Earth Scare In September of 2010 the Japanese government took into custody the captain of a Chinese fishing boat that had collided with Japanese patrol vessels near a group of uninhabited islands in the East China Sea claimed by both countries. China responded by imposing an embargo on shipments of rare earth elements (REE) to the Land of the Rising Sun. Even though Japan relented almost immediately and released the captain, a global panic began. This is because rare earths are “vitamins of chemistry,” as USGS scientist Daniel Cordier puts it. “They help everything perform better, and they have their own unique characteristics, particularly in terms of magnetism, temperature resistance, and resistance to corrosion.” By 2010 China produced well over 90 percent of the world’s REE. Its actions in the wake of the maritime incident convinced many that it could and would take unilateral action to control the flow of these important materials, and panicked buying soon followed (along with its close cousin rampant speculation). A bundle of REE that would have sold for less than $10,000 in early 2010 soared to more than $42,000 by April of 2011. In September of that year the US House of Representatives held a hearing called “China’s Monopoly on Rare Earths: Implications for US Foreign and Security Policy.” China didn’t attain its near monopoly because it possessed anything close to 90 percent of global reserves of REE. In fact, rare earths aren’t rare at all (one, cerium, is about as common in the earth’s crust as copper). However, they’re difficult to extract from ore. Obtaining them requires a great deal of acid and generates tons of salt and crushed rock as by-products. Most other countries didn’t want to bear the environmental burden of this heavy processing and so left the market to China. In the wake of the embargo, this seemed like a bad idea. As Representative Brad Sherman put it during the congressional hearing, “Chinese control over rare earth elements gives them one more argument as to why we should kowtow to China.” But there was never much kowtowing. By the time of the hearing, prices for REE were already in free fall. Why? What happened to the apparently tight Chinese stranglehold over REE? Several factors caused it to ease, including the availability of other supply sources and incomplete maintenance of the embargo. But as public affairs professor Eugene Gholz noted in a 2014 report on the “crisis,” many users of REE simply innovated their way out of the problem. “Companies such as Hitachi Metals [and its subsidiary in North Carolina] that make rare earth magnets found ways to make equivalent magnets using smaller amounts of rare earths in the alloys.… Meanwhile, some users remembered that they did not need the high performance of specialized rare earth magnets; they were merely using them because, at least until the 2010 episode, they were relatively inexpensive and convenient.” Overall, the companies using REE found many inexpensive and convenient alternatives. By the end of 2017 the same bundle of rare earths that had been trading above $42,000 in 2011 was available for about $1,000. What’s Going On? There is no shortage of examples of dematerialization. I chose the ones in this chapter because they illustrate a set of fundamental principles at the intersection of business, economics, innovation, and our impact on our planet. They are: We do want more all the time, but not more resources. Alfred Marshall was right, but William Jevons was wrong. Our wants and desires keep growing, evidently without end, and therefore so do our economies. But our use of the earth’s resources does not. We do want more beverage options, but we don’t want to keep using more aluminum in drink cans. We want to communicate and compute and listen to music, but we don’t want an arsenal of gadgets; we’re happy with a single smartphone. As our population increases, we want more food, but we don’t have any desire to consume more fertilizer or use more land for crops. Jevons was correct at the time he wrote that total British demand for coal was increasing even though steam engines were becoming much more efficient. He was right, in other words, that the price elasticity of demand for coal-supplied power was greater than one in the 1860s. But he was wrong to conclude that this would be permanent. Elasticities of demand can change over time for several reasons, the most fundamental of which is technological change. Coal provides a clear example of this. When fracking made natural gas much cheaper, total demand for coal in the United States went down even though its price decreased. With the help of innovation and new technologies, economic growth in America and other rich countries—growth in all of the wants and needs that we spend money on—has become decoupled from resource consumption. This is a recent development and a profound one. Materials cost money that companies locked in competition would rather not spend. The root of Jevons’s mistake is simple and boring: resources cost money. He realized this, of course. What he didn’t sufficiently realize was how strong the incentive is for a company in a contested market to reduce its spending on resources (or anything else) and so eke out a bit more profit. After all, a penny saved is a penny earned. Monopolists can just pass costs on to their customers, but companies with a lot of competitors can’t. So American farmers who battle with each other (and increasingly with tough rivals in other countries) are eager to cut their spending on land, water, and fertilizer. Beer and soda companies want to minimize their aluminum purchases. Producers of magnets and high-tech gear run away from REE as soon as prices start to spike. In the United States, the 1980 Staggers Act removed government subsidies for freight-hauling railroads, forcing them into competition and cost cutting and making them all the more eager to not have expensive railcars sit idle. Again and again, we see that competition spurs dematerialization. There are multiple paths to dematerialization. As profit-hungry companies seek to use fewer resources, they can go down four main paths. First, they can simply find ways to use less of a given material. This is what happened as beverage companies and the companies that supply them with cans teamed up to use less aluminum. It’s also the story with American farmers, who keep getting bigger harvests while using less land, water, and fertilizer. Magnet makers found ways to use fewer rare earth metals when it looked as if China might cut off their supply. Second, it often becomes possible to substitute one resource for another. Total US coal consumption started to decrease after 2007 because fracking made natural gas more attractive to electricity generators. If nuclear power becomes more popular in the United States (a topic we’ll take up in chapter 15), we could use both less coal and less gas and generate our electricity from a small amount of material indeed. A kilogram of uranium-235 fuel contains approximately 2–3 million times as much energy as the same mass of coal or oil. According to one estimate, the total amount of energy that humans consume each year could be supplied by just seven thousand tons of uranium fuel. Third, companies can use fewer molecules overall by making better use of the materials they already own. Improving CNW’s railcar utilization from 5 percent to 10 percent would mean that the company could cut its stock of these thirty-ton behemoths in half. Companies that own expensive physical assets tend to be fanatics about getting as much use as possible out of them, for clear and compelling financial reasons. For example, the world’s commercial airlines have improved their load factors—essentially the percentage of seats occupied on flights—from 56 percent in 1971 to more than 81 percent in 2018. Finally, some materials get replaced by nothing at all. When a telephone, camcorder, and tape recorder are separate devices, three total microphones are needed. When they all collapse into a smartphone, only one microphone is necessary. That smartphone also uses no audiotapes, videotapes, compact discs, or camera film. The iPhone and its descendants are among the world champions of dematerialization. They use vastly less metal, plastic, glass, and silicon than did the devices they have replaced and don’t need media such as paper, discs, tape, or film. If we use more renewable energy, we’ll be replacing coal, gas, oil, and uranium with photons from the sun (solar power) and the movement of air (wind power) and water (hydroelectric power) on the earth. All three of these types of power are also among dematerialization’s champions, since they use up essentially no resources once they’re up and running. I call these four paths to dematerialization slim, swap, optimize, and evaporate. They’re not mutually exclusive. Companies can and do pursue all four at the same time, and all four are going on all the time in ways both obvious and subtle. Innovation is hard to foresee. Neither the fracking revolution nor the world-changing impact of the iPhone’s introduction were well understood in advance. Both continued to be underestimated even after they occurred. The iPhone was introduced in June of 2007, with no shortage of fanfare from Apple and Steve Jobs. Yet several months later the cover of Forbes was still asking if anyone could catch Nokia. Innovation is not steady and predictable like the orbit of the Moon or the accumulation of interest on a certificate of deposit. It’s instead inherently jumpy, uneven, and random. It’s also combinatorial, as Erik Brynjolfsson and I discussed in our book The Second Machine Age. Most new technologies and other innovations, we argued, are combinations or recombinations of preexisting elements. The iPhone was “just” a cellular telephone plus a bunch of sensors plus a touch screen plus an operating system and population of programs, or apps. All these elements had been around for a while before 2007. It took the vision of Steve Jobs to see what they could become when combined. Fracking was the combination of multiple abilities: to “see” where hydrocarbons were to be found in rock formations deep underground; to pump down pressurized liquid to fracture the rock; to pump up the oil and gas once they were released by the fracturing; and so on. Again, none of these was new. Their effective combination was what changed the world’s energy situation. Erik and I described the set of innovations and technologies available at any time as building blocks that ingenious people could combine and recombine into useful new configurations. These new configurations then serve as more blocks that later innovators can use. Combinatorial innovation is exciting because it’s unpredictable. It’s not easy to foresee when or where powerful new combinations are going to appear, or who’s going to come up with them. But as the number of both building blocks and innovators increases, we should have confidence that more breakthroughs such as fracking and smartphones are ahead. Innovation is highly decentralized and largely uncoordinated, occurring as the result of interactions among complex and interlocking social, technological, and economic systems. So it’s going to keep surprising us. As the Second Machine Age progresses, dematerialization accelerates. Erik and I coined the phrase Second Machine Age to draw a contrast with the Industrial Era, which as we’ve seen transformed the planet by allowing us to overcome the limitations of muscle power. Our current time of great progress with all things related to computing is allowing us to overcome the limitations of our mental power and is transformative in a different way: it’s allowing us to reverse the Industrial Era’s bad habit of taking more and more from the earth every year. Computer-aided design tools help engineers at packaging companies design generations of aluminum cans that keep getting lighter. Fracking took off in part because oil and gas exploration companies learned how to build accurate computer models of the rock formations that lay deep underground—models that predicted where hydrocarbons were to be found. Smartphones took the place of many separate pieces of gear. Because they serve as GPS devices, they’ve also led us to print out many fewer maps and so contributed to our current trend of using less paper. It’s easy to look at generations of computer paper, from 1960s punch cards to the eleven-by-seventeen-inch fanfold paper of the 1980s, and conclude that the Second Machine Age has caused us to chop down ever more trees. The year of peak paper consumption in the United States, however, was 1990. As our devices have become more capable and interconnected, always on and always with us, we’ve sharply turned away from paper. Humanity as a whole probably hit peak paper in 2013. As these examples indicate, computers and their kin help us with all four paths to dematerialization. Hardware, software, and networks let us slim, swap, optimize, and evaporate. I contend that they’re the best tools we’ve ever invented for letting us tread more lightly on our planet. All of these principles are about the combination of technological progress and capitalism, which are the first of the two pairs of forces causing dematerialization.

### 2AC---War

#### Capitalist peace theory is true.

**Gartzke 7** (Eric, associate professor of political science @ Columbia and a member of the Saltzman Institute of War and Peace Studies, Jan. 2007, "The Capitalist Peace," Midwest Political Science Association, http://www.jstor.org/stable/pdf/4122913.pdf?refreqid=excelsior%3A6da465ba14ba238f87e23e8cf4f9b5fa)//KEN

The discovery that democracies seldom fight each other has led, quite reasonably, to the conclusion that democ- racy causes peace, at least within the community of liberal polities. Explanations abound, but a consensus account of the dyadic democratic peace has been surprisingly slow to materialize. I offer a theory of liberal peace based on capitalism and common interstate interests. Economic development, capital market integration, and the compatibility of foreign policy preferences supplant the effect of democ- racy in standard statistical tests of the democratic peace. In fact, after controlling for regional heterogeneity, any one of these three variables is sufficient to account for effects previously attributed to regime type in standard samples of wars, militarized interstate disputes (MIDs), and fatal disputes.' If war is a product of incompatible interests and failed or abortive bargaining, peace ensues when states lack dif- ferences worthy of costly conflict, or when circumstances favor successful diplomacy. Realists and others argue that state interests are inherently incompatible, but this need be so only if state interests are narrowly defined or when conquest promises tangible benefits. Peace can result from at least three attributes of mature capitalist economies. First, the historic impetus to territorial expansion is tempered by the rising importance of intellectual and financial capital, factors that are more expediently enticed than conquered. Land does little to increase the worth of the advanced economies while resource competition is more cheaply pursued through markets than by means of military occupation. At the same time, development actually increases the ability of states to project power when incompatible policy objectives exist. Development affects who states fight (and what they fight over) more than the overall frequency of warfare. Second, substantial overlap in the foreign policy goals of developed nations in the post-World War II period further limits the scope and scale of conflict. Lacking territorial tensions, consensus about how to order the international system has allowed liberal states to cooperate and to accommodate minor differences. Whether this affinity among liberal states will persist in the next century is a question open to debate. Finally, the rise of global capital markets creates a new mechanism for competition and communication for states that might otherwise be forced to fight. Separately, these processes influence patterns of warfare in the modern world. Together, they explain the absence of war among states in the developed world and account for the dyadic observation of the democratic peace.

### 2AC---Poverty

#### Capitalism solves poverty – aggregate data

Arie 18 (Benjamin, writer for Conservative Tribune, 6/27/18, “Extreme Poverty Has Dropped From 94% of World Pop. to 9.6% Thanks to Capitalism”, https://www.westernjournal.com/ct/extreme-poverty-has-dropped-from-94-of-world-pop-to-9-6-thanks-to-capitalism/, AZG)

Capitalism improves people’s lives and has changed the world for the better — but you won’t find many leftists admitting it any time soon. Instead, free-market economics are often blamed for causing the world’s ills, instead of curing them. Take one look at how close openly socialist Bernie Sanders came to being the Democrats’ nominee in the last presidential election to see that capitalism is bizarrely demonized instead of celebrated. It’s the same story in many European countries, while even our neighbors in Mexico appear poised to elect a far-left and socialist-leaning candidate as president on July 1. “The rich are getting richer, and the poor are getting poorer,” is the claim of anti-capitalists everywhere. But is it true? Not according to the facts. It turns out that worldwide poverty is declining at an incredible rate, and Western-style capitalism is the main reason. “The speed of poverty alleviation in the last 25 years has been historically unprecedented,” explained the Foundation for Economic Education, a pro-freedom think tank. “Not only is the proportion of people in poverty at a record low, but, in spite of adding 2 billion to the planet’s population, the overall number of people living in extreme poverty has fallen, too,” FEE continued. The numbers speak for themselves. “In 1820, 94 percent of the world’s population lived in extreme poverty,” pointed out Alexander Hammond, a researcher for HumanProgress.org. “In 1990, this figure was 34.8 percent, and in 2015, just 9.6 percent.” We think of the 1800s as “olden times,” but in the large scheme of history and human events, it really wasn’t that long ago. Most of human history, if we’re being honest, was marked by poverty and suffering by the vast majority of people on Earth. Lifespans were short and existence was brutal. Death, frustration, and sadness was the norm, not the exception. Just 200 years ago, almost all of the world’s population was resigned to live in poverty with no way out. There were a handful of elites — mainly the aristocracy — who were able to live relatively well, but even that “luxury” living was rough and uncomfortable by our modern standards. Then something changed — capitalism spurred advancement, and it wasn’t limited to just the elite. “In the last quarter century, more than 1.25 billion people escaped extreme poverty. That equates to over 138,000 people being lifted out of poverty every day,” FEE explained. “If it takes you five minutes to read this article, another 480 people will have escaped the shackles of extreme of poverty by the time you finish.” “In order to help the poorest, consider the impact free-market capitalism has had in the last 200 years in alleviating extreme poverty,” the foundation continued. “The Industrial Revolution turned the once-impoverished Western countries into abundant societies. The new age of globalization, which started around 1980, saw the developing world enter the global economy and resulted in the largest escape from poverty ever recorded.” To put it simply, the rich may be getting richer … but the poor are also getting richer. The foundation pointed to India as a prime example of how Western principles and capitalism are accelerating people out of poverty at a rate that is historically unprecedented. “Since its economic liberalization reforms in 1991, India’s average income has increased by 7.5 percent per year,” FEE explained. “That means that average income has more than tripled over the last quarter century. As wealth increased, the poverty rate in India declined by almost 24 percent.” “It is the people at the very bottom of the social strata who are getting richer faster,” the foundation summarized. At a time when it’s in vogue to bash capitalism and embrace disastrous socialism, it’s important to step back and look at the bigger picture. Life is getting dramatically, measurably better in almost every part of the world, and Western capitalist principles are at the center of that renaissance.

### 2AC---Inequality

#### No consistent link between economic freedom and inequality---capitalism net alleviates poverty.

Lazear 20, \*Edward P. Lazear was the Morris Arnold and Nona Jean Cox Senior Fellow at the Hoover Institution and the Davies Family Professor of Economics at Stanford University's Graduate School of Business.;(May 26th, 2020, “Socialism, Capitalism, And Income”, https://www.hoover.org/research/socialism-capitalism-and-income-0)

First, there is no evidence that, as a general matter, high-income groups benefit more from a move toward capitalism than low-income groups. The effect of changing state ownership and economic freedom on income is not larger for the rich than for the poor. Second, income growth is positively correlated across deciles. The situation is closer to a rising tide lifting all boats than to the fat man becoming fat by making the thin man thin. Finally, there is no consistent evidence across the large number of countries and time periods examined of any strong and widespread link between income growth and inequality. There are examples, like China, where income growth was coupled with large increases in inequality, but others like Chile, where strong income growth came about without much change in inequality, and South Korea, where inequality declined slightly as economic freedom and income grew over time.

Transfers and redistribution present the most complex picture of state involvement.

Transfers from rich to poor through the tax system are a luxury that only rich countries seem to be able to afford and are not a product of socialism per se. There is a very high correlation (-.67 in 2010) between contemporaneous median income and the low transfer index across countries.

High transfer countries like those in Scandinavia and other rich parts of Europe have primarily private ownership and economic freedom more like what prevails in the United States than in socialist countries. The poor definitely—and unsurprisingly—seem to benefit from higher transfers at a point in time. But the high taxes that generally go along with transfers do result in low income growth for median and high-income groups within a given country over time.

A similar pattern exists with respect to rule of law. The contemporaneous relation of rule of law to income is strong, but this seems to reflect the fact that countries that are wealthy demand rule of law rather than the reverse. Low state ownership at a point in time is a more consistent predictor of income growth within a country over the following decade than is rule of law at that same point in time.

Finally, not all transitions are alike. The Eastern European countries and the former Soviet Union saw large transitory declines in incomes for all groups during their transition to the market and the poor were more adversely affected than the rich. In China, and to a lesser extent India, market reforms brought about almost uninterrupted income growth. Venezuela provides an opposite example, moving from a more market-oriented economy to a socialist one.

Inequality fell slightly, but income growth was low for all groups and the poor have not regained the income levels that they had at the peak during the 1990s. The evidence suggests that it is economic shocks rather than transitions that disproportionately affect the poor. Transition from a command structure to the market is but one example of such a shock.

In sum, most income groups benefit from moves away from socialist command structures to free-market capitalism, but transfers can at least in the short run improve the well-being of those worst off.

### 2AC---Global South

#### Globalization is immensely beneficial for improving quality of life in the Global South---it’s also widely supported which proves their epistemic skepticism is from an ivory tower.

Horner et al. 18 (Rory, Global Development Institute, University of Manchester, Manchester, UK, “Globalisation, uneven development and the North–South ‘big switch’,” Cambridge Journal of Regions, Economy and Society 2018, 11, 17–33 doi:10.1093/cjres/rsx026)

Citizen surveys further reveal dramatic changes in attitudes to globalisation across and within the global North and South. While such surveys have methodological limitations,1 the results indicate distinctive trends that support the thesis of the ‘big switch’. Among people in the global South, polls have consistently found quite positive attitudes towards globalisation. In 2007, the Times of India claimed that ‘Indians believe globalisation benefits their country’, citing a poll by the Chicago Council on Global Affairs and World Public Opinion that 54% of Indians answered ‘good’ compared to 30% ‘bad’ to the question of whether increasing economic connections ‘with others around the world is mostly good or bad’. More recently, Stokes (2016) reported on Pew Research Surveys from 2016 which found that 60% of Chinese think their country’s involvement in the global economy is good (compared to 23% who think it is bad), while 52% of Indians surveyed thought it was good compared to 25% who said it was a problem. A recent YouGov survey of 20,000 people across 19 countries found a majority believed that globalisation has been a force for good. That survey found the most enthusiasm for globalisation in East and South-East Asia, where over 70% in all countries believed it has been a force for good. The highest approval, 91%, was in Vietnam, a relative latecomer to globalisation (Smith, 2017).

By contrast, public support for globalisation in the global North has plummeted. Bhagwati (2004) cited an Environics International Survey presented at the 2002 World Economic Forum Meetings to argue that disillusionment with globalisation was not universal; ‘anti-globalisation sentiments are more prevalent in the rich countries of the North, while pluralities of policy makers and the public in the poor countries of the South see globalisation instead as a positive force’ (2004, 8). Although Bhagwati suggested this was an ‘ironic reversal’, it proved to be in line with a 2007 BBC World Service poll that found 57% of people in G7 countries thought the pace of globalisation was too rapid, whereas the majority of those in ~~developing~~ countries surveyed thought it was just right or too slow (e.g. IMF, 2008; Pieterse, 2012). A 2007 Pew Global Poll similarly found a decline in the percentage of people in many Northern countries who believed trade had a positive impact. In its analysis of the survey results, Kohut and Wilke (2008, 6–7) commented that ‘it is in economically stagnant Western countries that we see the most trepidation about globalisation’. Almost 10 years later, The Economist (2016) reported on a YouGov survey of 19 countries, which found that fewer than half of people in the USA, UK and France believed that globalisation is a ‘force for good’ in the world. This broad change in attitude toward globalisation is playing out in national electoral politics as well as gatherings such as the World Economic Forum and the meeting of the Asia-Pacific Economic Cooperation.

The ‘big switch’ and the geography of uneven development

The ‘big switch’ seemingly confounds the predictions of the most vocal proponents and critics of globalisation alike. Uneven development is dynamic and relates to differences both within and among countries (Sheppard, 2016). Naïve claims that the world is flat or that economic globalisation is ‘win-win’ have rightly been dismissed (Baldwin, 2016; Christopherson et al., 2008; Turok et al., 2017), yet it is also insufficient to suggest that globalisation simply leads to a reproduction of existing inequalities, overlooking how that unevenness may be changing as a result of new macroeconomic geographies (Peck, 2016). While trade theory could predict that there would be ‘losers’ in the global North from international economic integration, proponents of economic globalisation have asserted that they would be few in number and could be compensated. More recently, it appears that a large group of people feel more forsaken than compensated. Similarly, for those who embraced Marxian political economy, and warned of its negative consequences in the South, the apparent optimism and support for globalisation in the South may have been unexpected. The sceptical internationalists (e.g. Evans, 2008; Kaplinsky, 2001; Stiglitz, 2006) should be acknowledged, however, for forecasting downsides in the global North. As we outline below, many people in the global North have experienced relative stagnation, whereas, albeit from a very low starting point and amidst considerable inequality, many people (but not all) have experienced improved development outcomes in the global South. We then explore what this apparent ‘big switch’ may tell us about contemporary economic globalisation.

The new geography of global uneven development

Significant portions of the population in the USA and other countries in the global North have experienced limited, if any, income gains in an era of globalisation. Milanovic’s (2016) ‘elephant graph’ (Figure 1) has quickly become a popular way to demonstrate the relative stagnation experienced in North America and Europe in recent decades. Exploring changes in real incomes between 1988 and 2008, he showed that those who particularly lost out on any relative gain in income were the global upper middle class (those between the 75th and 90th percentiles on the global income distribution) and the poorest 5% of the world population. Of these least successful percentiles, 86% of the population were from mature economies in the global North (Lakner and Milanovic, 2016, 23). Considering these contrasts more widely, a growing body of evidence shows that the global North’s dominance in the global economy is receding, with the share of high-income countries in global GDP having fallen from 76.8% in 2000 to 65.2% in 2015 (see Figure 1).

A different picture emerges in the global South. In Figure 1, it was Asians who comprised 90% of the population in the percentiles which did best in terms of relative income gains from 1988 to 2008 (Lakner and Milanovic, 2016, 223). The UNDP has remarked that

A striking feature of the world scene in recent years is the transformation of many ~~developing~~ countries into dynamic economies…doing well in economic growth and trade … they are collectively bolstering world economic growth, lifting other ~~developing~~ economies, reducing poverty and increasing wealth on a grand scale. (UNDP, 2013, 43)

The share of global GDP of low and middle income countries increased from 22.5% in 2000 to 34.1% in 2015 (Figure 2). Much of this increase is accounted for by China, as well as India and Brazil. Their share of global GDP, only 4.6% in 1960, 6.6% in 1990 and 9.3% in 2000, had almost doubled in the 21st century to 18% by 2015.

The development context of the global South has changed significantly since the turn of the Millennium, across a variety of important indicators. The total number of people in the world living on less than $1.90 per day (i.e. extreme poverty) has more than halved from 1.69 billion in 1999 to 766 million in 2013. At least by official estimates, the share of the population in the global South who are living in extreme poverty has fallen considerably this century. Whereas the percentage of the population in the global South with a daily consumption level of less than $1.90 was 33.4% in 1999, it was just 13.4% in 2013.2 The percentage of the world’s countries classified by the World Bank as low-income, albeit a very low threshold, more than halved within the first 15 years of the 21st century. Moreover, the total number of countries which are highly dependent on aid (having a net ODA > 9% of GNI) has fallen considerably, from 42 in 2000 to 29 in 2015, or from 34.1% to 23.2% of all low and middle-income countries with data available over that period.3

Considered overall, in comparison with the 1990s, the global South, in aggregate, now earns a much larger share of world GDP, has more middle-income countries, more middleclass people, less aid dependency, considerably greater life expectancy and lower child and maternal mortality. Table 1 provides some summary indicators for high-income countries (HICs) and low and middle-income countries (L&MICs), as somewhat imperfect approximations for global North and South.

After two hundred years of a ‘divergence, big time’ (Pritchett, 1997) between developed and ~~developing~~ countries following the Industrial Revolution, recent measurements suggest a change in the pattern of global inequality across a number of indicators (Horner and Hulme, 2017). The Global GINI of income distribution across all individuals in the world has fallen from 69.7 in 1988 to 66.8 in 2008 and 62.5 in 2013 (World Bank, 2016, 81). Analysis presented in the World Bank’s Taking on Inequality (2016) suggests that, in 1998, 26% of global income inequality was related to differences within countries, with the remaining 74% relating to differences among countries. By 2013, these shares were 35 and 65%. Two hundred years of a great divergence between global North and South now seems to have had some reversal, although more than half of an individual’s income can be accounted for by the country where he/she lives or was born (Milanovic, 2013). Inter-country inequality, rather than intra-country inequality, is still dominant, but it accounts for a diminished share of income-based and other inequalities (World Bank, 2016).

### 2AC---Alt---Elites

#### Elites – they block a transition

Alexander 15—Lecturer at the Office for Environmental Programs at the University of Melbourne who wrote his PhD thesis on degrowth (Samuel, Prosperous Descent: Crisis as Opportunity in an Age of Limits p. xiv-xv)

Before proceeding I should briefly anticipate an objection that will no doubt arise even from this preliminary overview. Let me be clear: the notion of ‘prosperous descent’ is not a prediction. I am not arguing that human beings are going to create a global village of thriving, sufficiency economies, nor do I even suggest that this is likely. And I am certainly not arguing that an unplanned, chaotic civilisational collapse into poverty is going to be ‘prosperous’ (so please do not accuse me of that). My argument is simply that economies of sufficiency, in which the entire community of life can flourish, are the only way to respond effectively to the overlapping crises of industrial civilisation. To oppose Margaret Thatcher with her own words: ‘there is no alternative’. If this can be established, as I believe it can, it would follow that we should try to create sufficiency economies, here and now, even if our chances of success do not look good. We may never realise the ideal of a sufficiency economy, but having a coherent ideal functions as a compass to guide action. Without a compass, our energies and efforts would lack direction and thus could easily be misdirected with the best of intentions. Indeed, I worry that dominant strains of the environmental movement today can be understood primarily as misdirected good intentions, efforts which tend to be mistaken in attempting to ‘green’ a growth-orientated mode of production that can never be green. Others oppose the existing order without having any conception of what should replace it. Even those who reject the growth economy sometimes fail to understand the radical implications of such a proposal; fail to understand that we cannot give up growth while other aspects of life more or less go on as usual. Sufficiency, I contend, is a revolutionary project. While I believe the practical question of ‘strategy’ – the question of how to realise a sufficiency economy – should remain open and dependent on context, the ‘theory of change’ that informs these essays is one grounded in grassroots, community-based action and initiatives. That is to say, I contend that until we have a culture or social consciousness that embraces sufficiency, our politicians are not going to be driven to create the necessary structures of sufficiency, nor, in the absence of such a culture, are we going to build new structures ourselves. In fact, even if such a culture of sufficiency emerged, our politicians are likely to be sluggish and non-responsive in supporting it. This means that the primary (although not necessarily the exclusive) forces of societal change must come ‘from below’, from people like you and me, working in our local communities, at the grassroots level. Before all else, we need to create the social conditions for deep transformation. There is a huge amount our governments could do, of course, to create just and sustainable economies of sufficiency, and in certain chapters I explore some available policy options. This can help us imagine alternative forms of human society and organisation. But we must not wait for governments to act, or we will still be waiting while the ship of civilisation sails over the cliff and crashes into the dark abyss below.

# 1AR

## 1AR Case

### 1AR-AT: Threat con

#### No impact to threat con also answers linguistics

Eric A. **Posner and** Adrian **Vermeule 3**, law profs at Chicago and Harvard, Accommodating Emergencies, September, <http://www.law.uchicago.edu/files/files/48.eap-av.emergency.pdf>

Against the view that panicked government officials overreact to an emergency, and unnecessarily curtail civil liberties, we suggest a more constructive theory of the role of fear. Before the emergency, government officials are complacent. They do not think clearly or vigorously about the potential threats faced by the nation. After the terrorist attack or military intervention, their complacency is replaced by fear. Fear stimulates them to action. Action may be based on good decisions or bad: fear might cause officials to exaggerate future threats, but it also might arouse them to threats that they would otherwise not perceive. **It is impossible to say in the abstract whether decisions and actions provoked by fear are likely to be better than decisions and actions made in a state of calm**. But our limited point is that there is no reason to think that the fear-inspired decisions are likely to be worse. For that reason, the existence of fear during emergencies does not support the antiaccommodation theory that the Constitution should be enforced as strictly during emergencies as during non-emergencies. C. The Influence of Fear during Emergencies Suppose now that the simple view of fear is correct, and that it is an unambiguously negative influence on government decisionmaking. Critics of accommodation argue that this negative influence of fear justifies skepticism about emergency policies and strict enforcement of the Constitution. However, this argument is implausible. It is doubtful that fear, so understood, has more influence on decisionmaking during emergencies than decisionmaking during non-emergencies. The panic thesis, implicit in much scholarship though rarely discussed in detail, holds that citizens and officials respond to terrorism and war in the same way that an individual in the jungle responds to a tiger or snake. The national response to emergency, because it is a standard fear response, is characterized by the same circumvention of ordinary deliberative processes: thus, (i) the response is instinctive rather than reasoned, and thus subject to error; and (ii) the error will be biased in the direction of overreaction. While the flight reaction was a good evolutionary strategy on the savannah, in a complex modern society the flight response is not suitable and can only interfere with judgment. Its advantage—speed—has minimal value for social decisionmaking. No national emergency requires an immediate reaction—except by trained professionals who execute policies established earlier—but instead over days, months, or years people make complex judgments about the appropriate institutional response. And the asymmetrical nature of fear guarantees that people will, during a national emergency, overweight the threat and underweight other things that people value, such as civil liberties. But if decisionmakers rarely act immediately, then the tiger story cannot bear the metaphoric weight that is placed on it. Indeed, the flight response has nothing to do with the political response to the bombing of Pearl Harbor or the attack on September 11. The people who were there—the citizens and soldiers beneath the bombs, the office workers in the World Trade Center—no doubt felt fear, and most of them probably responded in the classic way. They experienced the standard physiological effects, and (with the exception of trained soldiers and security officials) fled without stopping to think. It is also true that in the days and weeks after the attacks, many people felt fear, although not the sort that produces a irresistible urge to flee. **But this kind of fear is not the kind in which cognition shuts down**. (Some people did have more severe mental reactions and, for example, shut themselves in their houses, but these reactions were rare.) The fear is probably better described as a general anxiety or jumpiness, an anxiety that was probably shared by government officials as well as ordinary citizens.53 While, as we have noted, there is psychological research suggesting that normal cognition partly shuts down in response to an immediate threat, we are aware of no research suggesting that people who feel anxious about a non-immediate threat are incapable of thinking, or thinking properly, or systematically overweight the threat relative to other values. Indeed, it would be surprising to find research that clearly distinguished “anxious thinking” and “calm thinking,” given that anxiety is a pervasive aspect of life. People are anxious about their children; about their health; about their job prospects; about their vacation arrangements; about walking home at night. No one argues that people’s anxiety about their health causes them to take too many precautions—to get too much exercise, to diet too aggressively, to go to the doctor too frequently—and to undervalue other things like leisure. So it is hard to see why anxiety about more remote threats, from terrorists or unfriendly countries with nuclear weapons, should cause the public, or elected officials, to place more emphasis on security than is justified, and to sacrifice civil liberties. Fear generated by immediate threats, then, causes instinctive responses that are not rational in the cognitive sense, not always desirable, and not a good basis for public policy, but it is not this kind of fear that leads to restrictions of civil liberties during wartime. The internment of Japanese Americans during World War II may have been due to racial animus, or to a mistaken assessment of the risks; it was not the direct result of panic; indeed there was a delay of weeks before the policy was seriously considered.54 Post-9/11 curtailments of civil liberties, aside from immediate detentions, came after a significant delay and much deliberation. The civil libertarians’ argument that fear produces bad policy trades on the ambiguity of the word “panic,” which refers both to real fear that undermines rationality, and to collectively harmful outcomes that are driven by rational decisions, such as a bank run, where it is rational for all depositors to withdraw funds if they believe that enough other depositors are withdrawing funds. Once we eliminate the false concern about fear, it becomes clear that the panic thesis is indistinguishable from the argument that during an emergency people are likely to make mistakes. But if the only concern is that during emergencies people make mistakes, there would be no reason for demanding that the constitution be enforced normally during emergencies. Political errors occur during emergencies and nonemergencies, but the stakes are higher during emergencies, and that is the conventional reason why constitutional constraints should be relaxed.

### 1AR- Colonialism

#### Nuclear colonialism ended AT worst no impact

Collina & Kimball 12, director of policy at Ploughshares Fund and co-author, with former Defense Secretary William Perry, of “The Button: The New Nuclear Arms Race and Presidential Power from Truman to Trump,”; Executive Director of the Arms Control Association (Tom Z. Collina; Daryl G. Kimball, 9-20-2012, "No Going Back: 20 Years Since the Last U.S. Nuclear Test," Arms Control, Vol. 3, Issue 14, <https://www.armscontrol.org/issue-briefs/2012-09/going-back-20-years-since-last-us-nuclear-test>)

On September 23, 1992, under the surface of the Nevada Test Site, the United States conducted its 1,030th--and last--nuclear weapon test explosion. At the time, there were serious questions about whether the United States could indefinitely extend the service lives of its nuclear warheads without regular nuclear testing. But today, with the help of two decades of hard data and problem-solving through the nuclear weapons Stockpile Stewardship Program, those questions have been answered. As Bruce T. Goodwin, principal associate director for weapons at Livermore National Laboratory told The Washington Post in November 2011: "We have a more fundamental understanding of how these weapons work today than we ever imagined when we were blowing them up." It is now widely recognized that the United States no longer has any need for, nor any interest in, conducting nuclear explosive tests. Four presidential administrations have determined that it remains in the U.S. national security interests to refrain from resuming nuclear explosive testing: George H.W. Bush, Bill Clinton, George W. Bush and Barack Obama. The more time passes the more it becomes clear: the days of U.S. nuclear testing are over.

The Test Ban and Stockpile Stewardship

The 1992 U.S. testing halt was triggered by Congressional approval of the Exon-Hatfield-Mitchell 9-month test moratorium legislation--a bipartisan initiative that was prompted by the end of the Cold War, the closure of the Soviet test site in Kazakhstan in 1989, and Russia's unilateral test moratorium announced on October 5, 1991. The Senate approved the measure on August 3, 1992 by a 68-32 vote. The House adopted it on September 24 by a 224-151 margin. The legislation limited the number and purpose of any additional testing and set a September 30, 1996 end date for U.S. testing. On July 3, 1993, after an extensive interagency review, President Bill Clinton announced he would extend the U.S. moratorium and pursue multilateral negotiations for a Comprehensive Test Ban Treaty (CTBT). Negotiations began in 1994 and concluded in mid-1996. The treaty, which was opened for signature in September 1996, prohibits "any nuclear weapon test explosion," provides for an extensive global monitoring system and the option for short-notice, on-site inspections to detect and deter surreptitious nuclear weapons testing. Before signing the CTBT on September 24, 1996, President Clinton created the Stockpile Stewardship Program to maintain the U.S. nuclear arsenal in the absence of nuclear test explosions. Before the program would be able to show concrete results, the Senate rejected the CTBT in 1999 after a hasty and abbreviated debate, in part because some senators were concerned that the new approach might not work. Now, the stewardship program has proven so successful over the years that many informed observers who were initially skeptical believe that the United States does not need nuclear tests. As Linton Brooks, former director of the National Nuclear Security Administration (NNSA) under President George W. Bush, said in November 2011, "as a practical matter, it is almost certain that the United States will not test again... I have been in and out of government for a long time. And in recent years I never met anybody who advocated that we seek authorization to return to testing." And George Shultz, President Ronald Reagan's Secretary of State, said in April 2009, "[Republicans] might have been right voting against [the CTBT] some years ago, but they would be right voting for it now, based on these new facts.... [There are] new pieces of information that are very important and that should be made available to the Senate."

That Was Then, This Is Now

During the Congressional debate on the proposed nuclear test moratorium legislation in June 1992, then-Rep. Jon Kyl (R-Ariz.) argued: "... as long as we have a nuclear deterrent, we have got to test it in order to ensure that it is safe and it is reliable." Times have changed since 1992 and many of the old assumptions and beliefs about nuclear weapons and nuclear testing no longer apply. We now have almost two decades of experience with the Stockpile Stewardship Program, which has exceeded all expectations. The recent National Academy of Sciences (NAS) report, "The Comprehensive Nuclear Test Ban Treaty--Technical Issues for the United States," lays out a compelling technical case, based on the latest information, that the United States does not need nuclear tests to maintain its arsenal. The NAS report finds that "The technical capabilities for maintaining the U.S. stockpile absent nuclear-explosion testing are better now than anticipated" when the NAS issued its previous report in 2002, and that "the United States has the technical capabilities to maintain a safe, secure, and reliable stockpile of nuclear weapons into the foreseeable future without nuclear-explosion testing." The technical strategy for maintaining the U.S. nuclear stockpile without explosive testing has been in place for almost two decades. Since 1994, each warhead type in the U.S. nuclear arsenal has been determined to be safe and reliable through a rigorous annual certification process. The Stockpile Stewardship Program includes nuclear weapons surveillance and maintenance, non-nuclear and subcritical nuclear experiments, and increasingly sophisticated supercomputer modeling. Life extension programs have successfully refurbished existing types of nuclear warheads and can continue to do so indefinitely. A 2009 study by JASON, the independent technical review panel, concluded that the "lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss in confidence." Arguments for resuming U.S. nuclear testing have become weaker and weaker with time, as the stockpile is certified year-after-year and more warhead types have their service lives extended. Moreover, NNSA has more resources than ever before to perform core stockpile stewardship work. Since 2009, funding for the nuclear weapons complex has increased by 13%. The Obama administration's $7.6 billion budget request for fiscal year 2013 would boost NNSA weapons programs funding even more, by 5% over last year's appropriation of $7.2 billion. As Sen. Dianne Feinstein noted at a March 21, 2012 appropriations committee hearing, "Regarding nuclear weapons activities, I believe the fiscal year 2013 budget request provides more than sufficient funding to modernize the nuclear weapons stockpile." Nevertheless, some die-hard CTBT critics say that the United States might someday need to test to develop a new type of nuclear weapon. First, there is no military requirement for new types of nuclear weapons. Second, in the exceedingly unlikely event that nuclear testing is needed in the distant future, the United States has the option to exercise the CTBT's "supreme national interest clause" and withdraw from the treaty. Given that the United States already has the most advanced nuclear arsenal in the world, setting off another round of global nuclear tests would only serve to undermine U.S. security by helping other nuclear-armed states improve their nuclear capabilities.

Time To Finish The Job

The CTBT has now been signed by 183 nations and ratified by 157. The treaty has already improved U.S. and global security. Both Russia and China halted nuclear testing as a result of the CTBT and only one nation (North Korea) has conducted nuclear tests since 1998. In order for the CTBT to formally enter into force, however, it must still be ratified by the remaining eight "holdout" states listed in Annex 2 of the Treaty. Ratification by the United States and China is crucial. By signing the treaty and ending nuclear testing, Washington and Beijing have already taken on most CTBT-related responsibilities, yet their failure to ratify has denied them-and others-the full security benefits of the Treaty. U.S. ratification would reinforce the taboo against testing and prompt other key states--such as China, India, and Pakistan--to ratify the treaty. Without positive action on the CTBT, however, the risk that one or more states could resume nuclear testing will only grow. Nuclear testing is a dangerous and unnecessary vestige of the Cold War that the United States rightly abandoned in 1992. After 1,030 tests, the United States does not need further nuclear explosive testing, but those who would seek to improve their arsenals do. It is past time to take another look at the CTBT. The Senate has a responsibility to reconsider the treaty and to do so on the basis of an honest and up-to-date analysis of the facts and the issues at stake.

## K

### 1AR-AT: Food

#### Cap key to food

Bandler 17 (Aaron, staff writer for The Daily Wire, 3/18/17, “This AMAZING Chart Shows Just How Capitalism Has Alleviated Global Hunger”, https://www.dailywire.com/news/16621/amazing-chart-shows-just-how-capitalism-has-aaron-bandler, AZG)

A truly remarkable chart has surfaced that reveals that capitalism has sharply curtailed the scourge of global hunger. The chart, provided by Human Progress, shows that the number of undernourished persons sharply declined from nearly 960 million to under 700 million: There is clearly still work that needs to be done to ameliorate global hunger — as a little under 700 million malnourished people is still too high — but a decline of over 260 million malnourished people in a span of over 20 years is nevertheless amazing. This Human Progress chart actually disproves two leftist myths: capitalism is causing hunger, and overpopulation threatens essential resources. For instance, businessman Drew Hanson argued in a February 2016 Forbes piece that "capitalism will starve humanity by 2050," citing misleading statistics and claiming that capitalism would dry up the world's resources as the population continues to increase. "How do we expect to feed that many people while we exhaust the resources that remain?" Hanson wrote. Another leftist who claimed something similar is environmentalist fear-mongerer Paul Ehrlich, as he actually argued in favor of population control. But economist Julian Simon believed that a rising population would result in more resources, not less, and Simon was proven right: Simon and Ehrlich made a bet in 1980: if Ehrlich was correct, then commodities price would drastically increase with population growth, as a dearth of resources would naturally lead to less supply. However, as population has increased from 2 billion to 7 billion over the past 100 years, the commodities prices have actually decreased, according to The Federalist. This is because, as economist Phillip Verlerger once said, "Technology moves so quickly today that any looming resource constraint will be nothing more than a blip. We adjust." Indeed, the beauty of capitalism is that its respect for individual liberty and private property allows a free and prosperous people to produce goods that balances their skill set with market demand, creating a system that while imperfect, has created wealth that vastly improved society and made it easier to lift the poor and the hungry out of poverty. Even as Western societies have started to embrace the welfare state, capitalism has still managed to touch the globe through free trade and globalization, allowing those who have never tasted freedom to have a chance at improving their living situations. Despite what the Left would have you believe, capitalism is the most humane system on the face of the Earth and is the true answer to alleviating global hunger and poverty, as the Human Progress graph illustrates.

### 1AR-AT: Alt

#### Every movement has been crushed

Owen **Jones 11**, Masters at Oxford, named one of the Daily Telegraph's 'Top 100 Most Influential People on the Left' for 2011, author of "Chavs: The Demonization of the Working Class", The Independent, UK, "Owen Jones: Protest without politics will change nothing,” [www.independent.co.uk/opinion/commentators/owen-jones-protest-without-politics-will-change-nothing-2373612.ht](http://www.independent.co.uk/opinion/commentators/owen-jones-protest-without-politics-will-change-nothing-2373612.ht)

My first experience of police kettling was aged 16. It was May Day 2001, and the anti-globalisation movement was at its peak. The turn-of-the-century anti-capitalist movement feels largely forgotten today, but it was a big deal at the time. To a left-wing teenager growing up in an age of unchallenged neo-liberal triumphalism, just to have "anti-capitalism" flash up in the headlines was thrilling. Thousands of apparently unstoppable protesters chased the world's rulers from IMF to World Bank summits – from Seattle to Prague to Genoa – and the authorities were rattled.¶ Today, as protesters in nearly a thousand cities across the world follow the example set by the Occupy Wall Street protests, it's worth pondering what happened to the anti-globalisation movement. Its activists did not lack passion or determination. But they did lack a coherent alternative to the neo-liberal project. With no clear political direction, the movement was easily swept away by the jingoism and turmoil that followed 9/11, just two months after Genoa.¶ Don't get me wrong: the Occupy movement is a glimmer of sanity amid today's economic madness. By descending on the West's financial epicentres, it reminds us of how a crisis caused by the banks (a sentence that needs to be repeated until it becomes a cliché) has been cynically transformed into a crisis of public spending. The founding statement of Occupy London puts it succinctly: "We refuse to pay for the banks' crisis." The Occupiers direct their fire at the top 1 per cent, and rightly so – as US billionaire Warren Buffett confessed: "There's class warfare, all right, but it's my class, the rich class, that's making war, and we're winning."¶ The Occupy movement has provoked fury from senior US Republicans such as Presidential contender Herman Cain who – predictably – labelled it "anti-American". They're right to be worried: those camping outside banks threaten to refocus attention on the real villains, and to act as a catalyst for wider dissent. But a coherent alternative to the tottering global economic order remains, it seems, as distant as ever.¶ Neo-liberalism crashes around, half-dead, with no-one to administer the killer blow.¶ There's always a presumption that a crisis of capitalism is good news for the left. Yet in the Great Depression, fascism consumed much of Europe. The economic crisis of the 1970s did lead to a resurgence of radicalism on both left and right. But, spearheaded by Thatcherism and Reaganism, the New Right definitively crushed its opposition in the 1980s.This time round, there doesn't even seem to be an alternative for the right to defeat. That's not the fault of the protesters. In truth, the left has never recovered from being virtually smothered out of existence. It was the victim of a perfect storm: the rise of the New Right;

neo-liberal globalisation; and the repeated defeats suffered by the trade union movement.¶ But, above all, it was the aftermath of the collapse of Communism that did for the left. As US neo-conservative Midge Decter triumphantly put it: "It's time to say: We've won. Goodbye." From the British Labour Party to the African National Congress, left-wing movements across the world hurtled to the right in an almost synchronised fashion. It was as though the left wing of the global political spectrum had been sliced off. That's why, although we live in an age of revolt, there remains no left to give it direction and purpose.