## 1AC

### 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

## Kritik

### 2AC---FW

#### 3---discourse isn’t the primary shaper of reality – material consequences outweigh

Balzacq 5 (Thierry, Prof. of Political Science and IR @ Namar University, “The Three Faces of Securitization: Political Agency, Audience and Context,” European Journal of International Relations, June 2005, Vol. 11, No. 2)

However, despite important insights, this position remains highly disputable. The reason behind this qualification is not hard to understand. With great trepidation my contention is that one of the main distinctions we need to take into account while examining securitization is that between 'institutional' and 'brute' threats. In its attempts to follow a more radical approach to security problems wherein threats are institutional, that is, mere products of communicative relations between agents, the CS has neglected the importance of 'external or brute threats', that is, threats that do not depend on language mediation to be what they are - hazards for human life. In methodological terms, however, any framework over-emphasizing either institutional or brute threat risks losing sight of important aspects of a multifaceted phenomenon. Indeed, securitization, as suggested earlier, is successful when the securitizing agent and the audience reach a common structured perception of an ominous development. In this scheme, there is no security problem except through the language game. Therefore, how problems are 'out there' is exclusively contingent upon how we linguistically depict them. This is not always true. For one, language does not construct reality; at best, it shapes our perception of it. Moreover, it is not theoretically useful nor is it empirically credible to hold that what we say about a problem would determine its essence. For instance, what I say about a typhoon would not change its essence. The consequence of this position, which would require a deeper articulation, is that some security problems are the attribute of the development itself. In short, threats are not only institutional; some of them can actually wreck entire political communities regardless of the use of language. Analyzing security problems then becomes a matter of understanding how external contexts, including external objective developments, affect securitization. Thus, far from being a departure from constructivist approaches to security, external developments are central to it.

### 2AC---Utilitarianism

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

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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---Antitrust Good

#### The plan’s structuralist approach avoids critiques of reform

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C. The anti-monopoly revival as a structuralist turn

Both the platforms and financial regulation debates are manifestations of a broader shift in policy thought: the growing and renewed interest in antitrust and anti-monopoly regulatory approaches. 100 For these scholars antitrust law encompasses a broad toolkit of regulatory strategies to deal with concentrated corporate power and market dominance in sectors ranging from agriculture to pharmaceuticals to ‘big tech’ firms to finance. The toolkit involves not just the familiar strategies of limiting mergers and breaking up large firms, but also ‘functional’ separations, public utility regulations, and more. While there many design questions and intramural debates among these different tools and which tools apply best to which sectors, what this antitrust revival shares is an underlying orientation towards structuralist solutions. First, these antitrust scholars generally offer an empirical analysis of contemporary markets that shift the focus away from individual firm conduct to the linkages between conduct of firms and the larger structure of the market, its relative concentration, and the ways in which the market setting enables or incentivizes problematic firm behavior.101 While some critics have framed this renewed interest as naïve, it is very much rooted in empirical assessments of the current state of particular markets and sectors, which in turn motivates a return to structural solutions like breakup or common carriage obligations.102 Second, these antitrust proposals reflect a reassessment of conventional views of the costs and benefits of structural solutions like breakup. Since the 1970s, antitrust enforcement came under fire, as breakups were viewed as net harmful for the economy, and the goals of antitrust shifted to emphasize consumer welfare as the dominant focal point. But as more recent studies suggest, the fears of the costs of breakup may be overstated—and the assessment of the social and economic benefits of market concentration also overstated in ways that tip the scales back in favor of structural solutions.103 Finally, the new antitrust moment also reflects a different assessment of administrative capacities. As Rory Van Loo suggests in a recent paper, breakups are, despite their conventional image, administrable and effective, and where there are challenging details to be worked out, those particulars are no more difficult to manage than many familiar thorny problems in complex regulatory policy.104 Nonstructural alternatives, meanwhile, are more complex in practice than these critiques suggest.105 III. Applications and Implications The examples of structuralist policymaking in Part II above are illustrative of a broader pattern of structuralist policymaking and structuralist regulatory strategy. The underlying assumptions—focusing on structure and system as the target of regulation rather than individual instances of conduct; the reassessing of costs and benefits of these interventions, especially to prevent especially problematic risks or outcomes; and the reimagining of administrability and efficacy questions—can shape how we approach a range of other policy debates as well. This Part identifies some examples of how this approach to conceptualizing policymaking might apply in other cases, as well as some general implications of structuralist approaches.

A. Structuralism: other potential applications

The distinction between structuralist and non-structuralist regulatory logics helps explain and inform a range of other policy debates beyond the ones profiled in Part II above. As suggested in the Introduction, one way to read the debates over criminal justice reform and policing reform right now is in terms of this same distinction between structural and nonstructural logics. There are a range of proposals for combating the problem of police brutality and police violence, particularly as it affects Black and brown communities in the United States. Many of these proposals revolve around attempts to improve police officer conduct: through anti-bias training, changes to use-of-force principles, body cameras to provide ex post accountability and surveillance of police officer conduct, and the like. But for abolitionists and racial justice movements, these proposals have largely been met with skepticism. For these movement activists, the problem of police violence is endemic to a system of policing where racial bias and where the ethic of violent disciplining of communities of color is baked in so deeply that these kinds of conduct-focused measures will not be sufficient to address the problem of police violence. Alternative proposals of abolition, “defunding the police” or “invest-divest” rest on a different logic: that the problem of police violence can be better addressed by intervening upstream from individual instances of police conduct, and instead redirecting resources away from police departments, into alternative institutions focused on community stability and security. This shift is animated by the structuralist presumptions explored above. First, there is an empirical and causal claim about the systemic origins of police violence. Second, there is a different assessment of the social value of current policing institutions as net-negative, and worth restructuring rather than preserving. Third, there is an implicit view about administrability: the resources and level of information and efficacy needed for technocratic solutions to have impact reflect an overly-rosy view of what training or body cameras can accomplish; by contrast the simple redirecting of public funds would create such a sea change in the nature of public authority that it is in many ways more efficacious an intervention. Or take antidiscrimination law as another example. From employment to housing, legal scholars have suggested a range of structural solutions to endemic problems of discrimination in employment and housing contexts, as a way to remedy the deeper root drivers of discrimination and move beyond individualized, case-by-case modes of enforcement. In the employment context, for example, Susan Sturm has suggested that the problem of systemic biases requires a move beyond individualized enforcement measures to “structural” ones that seek to alter the underlying culture and organizational structure of firms, in particular by embedding systems within firms to monitor and respond to transgressions, and affirmatively prevent more subtle forms of bias in the workplace. 106 On this approach, employers could be held liable for institutional practices and systems that conduce to instances of discrimination.107 Sam Bagenstos has similarly argued for more systemic approaches to antidiscrimination laws, such as the reasonable accommodation standard established in the Americans with Disabilities Act as offering a way to affirmatively promote systemic inclusion and combat patterns of subordination.108 In the housing context, Olati Johnson has argued for a move away from private enforcement of individual claims to instead using affirmative “equality directives” that through administrative measures like the “Affirmatively Furthering Fair Housing” rule, prods local governments to pro-actively design different approaches to zoning, housing policy, and urban infrastructure to promote desegregation.109 These approaches to antidiscrimination share a few common features that echo the structuralist moves identified above. They all shift focus from individualized instances or conduct to underlying firm or geographic systems, designing regulatory interventions to alter those background systems as a way of changing the incidences and patterns of discrimination. Second, these alternative approaches reflect a very different set of presumptions, a greater willingness to exert more dramatic costs and changes on private ordering, in service of public values of non-discrimination. And third, they reflect a boldness and faith in regulatory capacity to induce these changes to the system—and in some ways also reflect a humility, a realization that individualized private enforcement is unlikely to diagnose and respond to the number of instances of problems that will arise.

B. Conceptual implications of structuralist approaches

Stepping back from particular applications of structuralist approaches, there are a number of broader implications of deploying structuralist strategies that are worth naming explicitly. First, structuralism as a way of thinking about public policy operates in some ways as a flipping of presumptions, from a default orientation to market and private ordering in which policy interventions are to be judicious, minimalist, and face higher burdens of justification, to a focus on public goals and needs, where the presumption operates in favor of state action designed to constitute the terrain of economic or social activity. Consider for example proposals for regulating financial activities and money-like products along the lines proposed by Ricks. As Ricks suggests, a range of modern financial firms create moneylike financial instruments, from money market mutual funds to repo markets. These activities, to Ricks, should be regulated strictly in ways analogous to the strict restrictions imposed on cash depositories.110 Money, for Ricks, is a kind of economic infrastructure that should be subjected to public utility style regulations on market entry, rate regulations, and obligations to serve all comers.111 This infrastructural approach is rooted in a conceptual shift: “rather than seeing bank money creation as a legitimate private activity that is regulated, it sees money creation as an intrinsically public activity that is outsourced.”112 By shifting the “institutional baseline” to “public provisioning,” this alters in a fundamental way how risks and costs are assessed. Ricks’ example is indicative of a common feature across applications of structuralist policymaking. Other structural-oriented financial regulation proposals share a similar burdenshifting quality. Yesha Yadav has proposed stricter liability on exchanges for failing to prevent instances of fraud, for example, placing the burden on the exchanges, not on regulators, to be pro-active.113 Saule Omarova proposes a financial product approval process, which would place the burden of justification and safety design on firms, not on regulators.114 These examples show a shifting of baseline presumptions away from markets and private ordering as a default. This in turn places structuralist regulation in the company of policy strategies and concepts that may be of particular value in overcoming market fundamentalist and market-oriented presumptions that for many scholars and critics have characterized the last few decades of “neoliberal” and market-oriented policy imagination.115 Like the precautionary principle, this burden-shifting can also manifest in the other direction, as a greater willingness to deploy strict regulatory restrictions in the face of uncertainty, rather than requiring a greater burden of proof for regulators seeking to intervene. 116 Second, this flipping of the baseline is partly a result of an empirical and sociological understanding. Structural regulation depends partially on analysis that can diagnose the “upstream” causes and identifying levers to change the background socioeconomic conditions that would lower the incidence of problematic conduct “downstream.” The idea that breakups could prevent problematic conduct by market dominant actors turns in part on new empirical findings about how firms have achieved concentration and how that shapes their business models and day-to-day practices. Similarly, the turn to structuralist financial regulations rests on the causal and empirical analyses that identified the structural dimensions of the 2008 financial collapse. This idea of “upstream” causes is not without controversies of its own. There are likely to be significant empirical, causal, and sociological disagreements about whether and which structural features lie at the “root” of the goods or practices that regulation targets. In the financial regulation or antitrust contexts, empirical study has been key to highlighting the underlying features of market structure that conduces to problematic conduct or systemic risks. In the antidiscrimination context, we could understand familiar legal concepts like disparate impact as offering legal justification for shifting from a focus on individualized intent or proof of harm to longer causal chains less tethered to discrete individual actors.117 We may disagree about these causal claims in ways that make aligning on structural solutions difficult. But it is also worth distinguishing where there are genuine factual or causal disagreements about which structural causes are central, from instances where instead we have an anti-structural skepticism of regulatory intervention as noted in Part I above. Third, it is worth noting that structuralist interventions themselves can operate at different levels. For some scholars who have explicitly employed structuralist frames in their work, the structural turn is about shifting the organizational culture and norms within a firm, as a way of institutionalizing more systemic changes in conduct rather than focusing on individual transgressions. Coates frames the Volcker rule in this way.118 As noted earlier, Sturm similarly defines “structural” approaches to anti-discrimination as a way to shift the culture of the workplace itself to prevent or blunt more hidden and implicit forms of bias. 119 Similarly, some corporate law and financial regulation scholars emphasize compliance culture.120 Other structuralist interventions operate even further upstream from the culture of the firm: antitrust concepts or limits on financial firm size or GDPR-style restrictions on the use of data in Facebook’s business model for example alter the very nature of the market and system in which these firms operate, above and beyond any impact on firm cultures of compliance. This suggests a fourth implication: while this paper has largely treated ‘structural’ interventions as distinct from non-structural ones, one could imagine circumstances where structural and non-structural solutions might coexist and even complement one another. Some structuralist strategies might operate by targeting specific firms in ways designed to induce a broader change in business models, practices, and conduct in the sector more broadly. In the financial regulation context, one way to read the impact of the FSOC’s power to designate firms as ‘systemically risky’ is as a highly costly threat that forces firms to alter their business models and cultures to avoid running afoul of the designation authority—what some scholars have called “regulation by threat”.121 Although this intervention in a sense targets individual firms, it does so in a way that induces wider shifts in the sector writ large. Similarly, Rory Van Loo has highlighted the role of “gatekeeper” firms who themselves can be deputized as enforcers and regulators of whole sectors, by well-designed regulatory interventions that leverage the oversight and systemic power of key firms like platforms or infrastructural firms like banks.122 In the policing context, we might consider the revocation of qualified immunity in a similar light: while this shift would operate by imposing costs on individual state actors, it could shift incentives so dramatically as to induce a wider shift in policing culture and practice.

C. Institutionalizing structural policies

A structuralist lens on regulation and public policy raises a number of further implications for the structure of policymaking bodies themselves. First, structuralism can apply just as readily in context of legislation as it can in context of administrative policymaking. This paper has used the term “regulation” loosely, at times referring to statutory interventions, at other points highlighting administrative rules. The point is that when we look at the underlying strategy informing a policy intervention, we can see important differences in how policymakers conceptualize the problem and their tools that shapes the content of those policy interventions—independent of the institutional setting through which the policy is implemented. Second, insofar as structural regulations do involve administrative actions, it is likely that some of our prevailing conceptions about regulatory policymaking will also have to shift to better align with these strategies. In particular, as scholars in the financial regulation arena have noted, structuralist approaches to financial regulation seem to require a more expansive view of conventional understandings of cost-benefit analysis. When rules are themselves constitutive of markets, and upstream of individual firm or entity actions, any cost-benefit analysis is likely to be highly speculative—and easily misapplied. In this context, cost-benefit requirements whether doctrinal (as in the case of arbitrary and capricious review) or administrative could be misapplied, or even weaponized by industry to oppose structural solutions.123 Third, structuralist regulations will still require administrative agencies to be implemented and enforced—and this type of regulatory strategy might require different types of agency structures, capacities, or designs. The implementation and then quick dismantling of structural financial regulations like the Volcker Rule and the systemic risk designations by the Financial Stability Oversight Council for example suggests that precisely because of their significant impacts on industry, structuralist rules might be more likely to generate tougher pushback and lobbying from industry—which in turn suggests the need for greater attention to agency designs that prevent capture, empower other stakeholder groups, and promote democratic accountability.124 Structuralist anti-discrimination law, as Bagenstos notes, depends on alert, active, and engaged enforcement agencies to get off the ground.125 In the tech platforms and big data debate, some scholars have proposed various administrative law mechanisms to promote greater regulation, from review boards to disparate impact statements to the creation of dedicated regulatory bodies focused on the problems of big data.126 The efficacy of these administrative structures, however, depend on the degree to which they are deployed in service of more structurally transformative policies.

IV. Conclusion: Structuralism and the inequality crisis

Across a range of debates in economic policy, racial justice, and public law, we see a renewed interest among scholars and policymakers in what this paper has called “structuralist” policymaking strategies. Structural strategies are animated by three underlying conceptual shifts: first a focus on the structure and system as the target of regulation rather than individualized conduct or entities; second, a reassessment of costs and benefits that favors more prophylactic and “upstream” interventions; and third, a reassessment of the relative administrability and efficacy of structural approaches in contrast with more conventional regulatory models such as direct conduct supervision or disclosure regimes. This focus on structuralist strategies arises particularly in context of the broader current crisis of economic, social, and political inequality affecting American democracy. The renewed interest in more structural, transformative, and durable policy interventions in these different policy domains from finance to tech to antitrust to racial justice reflects in part a broader political moment of deeper concern in and attention to structural inequities. In recent years, the problem of economic inequality has taken center stage in law and policy discussions, and in the last few years we have also seen a greater public attention to questions of racial justice and structural questions of power.127 Structural regulations seem especially critical for overcoming deeply entrenched inequities of wealth, power, influence, and control over the economic and social realities of American democracy. The urgency of these inequities is reflected in the surge of social movement organizing in recent years, and it is telling that many of these movements for economic and racial justice themselves deploy a specifically structural language and frame for diagnosing the root causes of inequality and in the solutions they are offering.128 The stakes of this structuralist turn in policymaking strategy, then, is about more than simply rediscovering a different way to approach public policy; it is also fundamentally about developing the kind of policy language and a legal architecture needed to meet the urgent needs of egalitarian and democratic social change in this moment.

#### Making legal demands of the government doesn’t mean affirming bureaucratic legitimacy

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There are two aspects that I would like o address here. Firstly, the notion of demand: making certain demands on the states- say for higher wages, equal rights for excluded groups, to not go to war, or an end to draconian policing-is one of the basic strategies of social movements and radical groups. Making such demands does not necessarily mean working within the state or reaffirming its legitimacy. On the contrary, demands are made from a position outside the political order, and they often exceed the question of the implementationof this or that specific measure. They implicitly call into question the legitimacy and even the sovereignty of the state by highlighting fundamental inconsistencies between, for instance, a formal constitutional order which guarantees certain rights and equalities, and state practices which in reality violate and deny them.

### 2AC---China

#### The Government of China is revisionist – their actions are only explained by an attempt at short-term regional hegemony and long-term global hegemony

Cordesman ‘19

(Anthony, Arleigh A. Burke Chair in Strategy at the Center for Strategic and International Studies, “China and the U.S.: Cooperation, Competition and/or Conflict An Experimental Assessment,” Working Draft Revised September 12, 2019, Snider)

China’s economic, political, and military rise is one of the defining elements of the 21st century. Today, the Indo-Pacific increasingly is confronted with a more confident and assertive China that is willing to accept friction in the pursuit of a more expansive set of political, economic, and security interests. Perhaps no country has benefited more from the free and open regional and international system than China, which has witnessed the rise of hundreds of millions from poverty to growing prosperity and security. Yet while the Chinese people aspire to free markets, justice, and the rule of law, the People’s Republic of China (PRC), under the leadership of the Chinese Communist Party (CCP), undermines the international system from within by exploiting its benefits while simultaneously eroding the values and principles of the rules-based order. With more than half of the world’s Muslim population living in the Indo-Pacific, the region views the PRC’s systematic mistreatment of Uighurs, Kazakhs, and other Muslims in Xinjiang – including pervasive discrimination, mass detention, and disappearances – with deep concern. China’s violation of international norms also extends abroad. Chinese nationals acting in association with the Chinese Ministry of State Security were recently indicted for conducting global campaigns of cyber theft that targeted intellectual property and confidential business and technological information at managed service providers. China has continued to militarize the South China Sea by placing anti-ship cruise missiles and long-range surface-to-air missiles on the disputed Spratly Islands and employing paramilitary forces in maritime disputes vis-à-vis other claimants. In the air, the People’s Liberation Army (PLA) has increased patrols around and near Taiwan using bomber, fighter, and surveillance aircraft to signal Taiwan. China additionally employs non-military tools coercively, including economic tools, during periods of political tensions with countries that China accuses of harming its national interests. The People’s Republic of China’s Military Modernization and Coercive Actions As China continues its economic and military ascendance, it seeks Indo-Pacific regional hegemony in the near-term and, ultimately global preeminence in the long-term. China is investing in a broad range of military programs and weapons, including those designed to improve power projection; modernize its nuclear forces; and conduct increasingly complex operations in domains such as cyberspace, space, and electronic warfare operations. China is also developing a wide array of anti-access/area denial (A2/AD) capabilities, which could be used to prevent countries from operating in areas near China’s periphery, including the maritime and air domains that are open to use by all countries. In 2018, China’s placement of anti-ship cruise missiles and long-range surface-to-air missiles on the disputed Spratly Islands violated a 2015 public pledge by the Chairman of the CCP Xi Jinping that “China does not intend to pursue militarization” of the Spratly Islands. China’s use of military presence in an attempt to exert de facto control over disputed areas is not limited to the South China Sea. In the East China Sea, China patrols near the Japan-administered Senkaku Islands with maritime law enforcement ships and aircraft. These actions endanger the free flow of trade, threaten the sovereignty of other nations, and undermine regional stability. Such activities are inconsistent with the principles of a free and open Indo-Pacific. Simultaneously, China is engaged in a campaign of low-level coercion to assert control of disputed spaces in the region, particularly in the maritime domain. China is using a steady progression of small, incremental steps in the “gray zone” between peaceful relations and overt hostilities to secure its aims, while remaining below the threshold of armed conflict. Such activities can involve the coordination of multiple tools, including political warfare, disinformation, use of A2/AD (anti-access/area denial) networks, subversion, and economic leverage. During the last decade, China continued to emphasize capabilities for Taiwan contingencies. China has never renounced the use of military force against Taiwan, and continues to develop and deploy advanced military capabilities needed for a potential military campaign. PLA modernization is also strengthening its ability to operate farther from China’s borders. For example, the PLA is reorganizing to improve its capability to conduct complex joint operations, and is also improving its command and control, training, personnel, and logistics systems. Key weapon systems deployed or in development include cruise and ballistic missile systems, modern fighter and bomber aircraft, aircraft carriers, modern ships and submarines, amphibious assault ships, surface-to-air missile systems, electronic warfare systems, direct-ascent, hit-to-kill anti-satellite missiles, and autonomous systems. China’s Use of Economic Means to Advance Its Strategic Interests China is using economic inducements and penalties, influence operations, and implied military threats to persuade other states to comply with its agenda. Although trade has benefitted both China and its trade partners, Chinese use of espionage and theft for economic advantage, as well as diversion of acquired technology to the military, remains a significant source of economic and national security risk to all of China’s trading partners. While investment often brings benefits for recipient countries, including the United States, some of China’s investments result in negative economic effects or costs to host country sovereignty. Chinese investment and project financing that bypasses regular market mechanisms results in lower standards and reduced opportunities for local companies and workers, and can result in significant debt accumulation. One-sided and opaque deals are inconsistent with the principles of a free and open Indo-Pacific, and are causing concern in the region. For example, in 2018, Bangladesh was forced to ban one of China’s major state firms for attempted bribery, and in the same year, Maldives’ finance minister stated that China was building infrastructure projects in the country at significantly inflated prices compared to what was previously agreed. Furthermore, a Chinese state-owned enterprise purchased operational control of Hambantota Port for 99 years, taking advantage of Sri Lanka’s need for cash when its government faced daunting external debt repayment obligations. The United States does not oppose China’s investment activities as long as they respect sovereignty and the rule of law, use responsible financing practices, and operate in a transparent and economically sustainable manner. The United States, however, has serious concerns with China’s potential to convert unsustainable debt burdens of recipient countries or sub-national groups into strategic and military access, including by taking possession of sovereign assets as collateral. China’s coercive behavior is playing out globally, from the Middle East and Africa to Latin America and Europe.

### 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.

### 2AC---LT---Cybersecuritization

#### That’s an example of ‘riskification’---responding to the underlying conditions that enable cyberattacks is productively securitizing and solves their links.

Friis et al. 16, \*Karsten Friis and Erik Reichborn-Kjennerud, Norwegian Institute of International Affairs (NUPI) (“From Cyber Threats to Cyber Risks”, Conflict in Cyber Space: Theoretical, Strategic and Legal Perspectives, Karsten Friis and   
Jens Ringsmose eds., London: Routledge, 2016)

A shared starting point is the constructivist epistemology position on dangers. According to Corry, nothing is inherently a threat or a risk as 'different dangers can be constructed in terms of either risk or threat at different times' (Corry 2012, 246). To understand the difference between threat security policies and risk security policies, one can therefore not define the former as graver or more dangerous than the latter. Rather, Corry argues that risk security can be distinguished from threat security by three features:

First, it implies a different kind of causality. Risk makes us think of the 'constitutive causes of harm', rather than the direct causes of harm (as in threats) (Corry 2012). Riskification relates to the factors that make a danger possible, such as vulnerability of societies, weak international regimes and the existence of weapons. In contrast, the threat and securitization of for instance terror is 'connected to particular agents believed to exist and have malicious intent and capability to commit acts of terror' (Corry 2012). This is a more direct causation of harm than a risk, and produces a different logic for action. Furthermore, Corry argues, '(t)hinking in terms of constitutive causes draws attention to background factors and structures (material or discursive) that make certain actions or events possible' (Corry 2012). The focus on constitutive background factors thus opens for the inclusion of material factors – such as malware – into the analysis.

Second, there is a change of locus of security action: 'whereas securitization involves a plan of action to defend a valued referent object against a threat, riskification implies a plan of action to govern the conditions of possibility of harm' (Corry 2012, 247). Threats cannot be governed, only defended against. The attention is therefore outward, while a risk policy looks inward. 'Security thus has to take on modus operandi other than defence' (Corry 2014). It is not about deterrence, defence or fighting, but about understanding dependencies and vulnerabilities, precaution and governance. It is about reducing the chances of possible future harm through preventive policies, resilience and international governance.

Third, while securitization calls for immediate and short-term responses through extraordinary measures, riskification promotes long-term thinking, investment in governance capabilities, investment in precautionary measures and resilience. In contrast to securitization, it may open debates and increase transparency in the discourse on security (Corry 2012, 248).

To sum up, riskification is not characterised by an existential threat to a valued referent object leading to exceptional measures against external and ungovernable threatening others. Rather, it posits risks (understood as condition of possibly harm) to a referent object. This thus leads to programmes for permanent changes aimed at reducing vulnerability and boosting governance-capacity of the valued reference object itself' (Corry 2012).

Riskification of Cyber

Armed forces worldwide are generally constrained to protecting their own information and communications technology (ICT) systems. Main responsibility for securing cyberspace, on the other hand, lies with civilian and commercial agencies. This means that cyber security is mostly dealt with on a day-to-day basis by cyber security professionals in civilian and commercial organisations rather than military 'cyber warriors'. In contrast to securitization theory, riskification may be a relevant tool for the analysis of these less dramatic responses and the everyday production of cyber security. This includes preparations to sustain larger attacks, while keeping the door open for escalation and securitization under particular circumstances. By applying Corry's three characteristics of riskification (constitutive causality, governance, and long-term), in the following we will see how this applies to cyber security.

### 2AC---No !---China Threat Construction

#### No self-fulfilling prophesy---theorizing about the danger of US-China war creates the caution and risk-aversion necessary to avoid it.

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Throwing the Baby Out with the Bathwater?

Chan warns that the discourse on Thucydides’s Trap and power transition can create a self-fulfilling prophecy. If leaders believe in Thucydides’s Trap and act accordingly, it may create the anticipated conditions that make war more likely. Talking and thinking in terms of Thucydides’s Trap will influence the state’s construction of its identity as well as its definition of interests and preferences. The discourse is harmful because it encourages ‘othering’ the opponent and contributes to confrontation.

Should we, then, throw out the proposition that war is more likely when the system is undergoing a power transition?

It might be worthwhile to go back to what Thucydides’s Trap refers to: “the severe structural stress caused when a rising power threatens to upend a ruling one. In such conditions, not just extraordinary, unexpected events, but even ordinary flashpoints of foreign affairs, can trigger large-scale conflict.”[112] Instead of creating a self-fulfilling prophecy, this statement should induce caution from leaders in Beijing and Washington. Understanding the danger of war is the first step to avoid being trapped in it. Like Chan, Allison seeks to offer “a set of principles and strategic options for those seeking to escape Thucydides’s Trap and avoid World War III.”[113]

Obviously, historical analogies cannot completely capture an ongoing event. Allison himself cautions against “facile analogizing” and emphasizes that “the differences matter at least as much as the similarities.”[114] The purpose of analogizing Thucydides’s Trap is not to shoehorn China and the United States into the roles of Athens and Sparta respectively, as Chan suggests (17-18), but to underscore the enduring feature of international politics throughout the ages. The dynamics of conflict highlighted by Thucydides remain as relevant today as it was two thousand years ago.

Many scholars accuse structural theory of determinism, as Chan does, (14, 34), even though structuralists do not adopt it. States can go to war for a variety of reasons. Attempting to isolate a single cause for all wars is impossible. The proposition that war tends to break out during a power transition is better understood as a probabilistic—not deterministic—statement. The structural tensions cause by power shifts can substantially increase the probabilities of war, much like dry leaves waiting for a spark, but it does not mean that war will inevitably break out. Properly understood, Thucydides’s Trap cautions us to be prepared for the danger of war during a power transition.

Overall, Chan’s book provides a stronger critique of power transition theory than of Thucydides’s Trap. Students of power shifts should take his argument seriously and avoid the pitfalls he identifies. We should not, however, hastily dismiss the warnings of Thucydides’s Trap.

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## Case

### AT: Climate K

#### Climate Apocalypticism spurs individual and institutional actions---it’s preferable to the squo

**Veldman 12** – PhD Candidate Religion and Nature at U of Florida (Robin- National Foundation Fellow at the Integrative Graduate Education and Research Traineeship, Spring, “Narrating the Environmental Apocalypse: How Imagining the End Facilitates Moral Reasoning Among Environmental Activists” Ethics and the Environment, Vol 17 No 1, ProjectMuse)

Environmental Apocalypticism and Activism As we saw in the introduction, critics often argue that apocalyptic rhetoric induces feelings of hopelessness or fatalism. While it certainly does for some people, in this section I will present evidence that apocalypticism also often goes hand in hand with activism. Some of the strongest evidence of a connection between environmental apocalypticism and activism comes from a national survey that examined whether Americans perceived climate change to be dangerous. As part of his analysis, Anthony Leiserowitz identified several “interpretive communities,” which had consistent demographic characteristics but varied in their levels of risk perception. The group who perceived the risk to be the greatest, which he labeled “alarmists,” described climate change [End Page 5] using apocalyptic language, such as “Bad…bad…bad…like after nuclear war…no vegetation,” “Heat waves, it’s gonna kill the world,” and “Death of the planet” (2005, 1440). Given such language, this would seem to be a reasonable way to operationalize environmental apocalypticism. If such apocalypticism encouraged fatalism, we would expect alarmists to be less likely to have engaged in environmental behavior compared to groups with moderate or low levels of concern. **To the contrary**, however, Leiserowitz found that alarmists “were significantly more likely to have taken personal action to reduce greenhouse gas emissions” (ibid.) than respondents who perceived climate change to pose less of a threat. Interestingly, while one might expect such radical views to appeal only to a tiny minority, Leiserowitz found that a respectable eleven percent of Americans fell into this group (ibid). Further supporting Leiserowitz’s findings, in a separate national survey conducted in 2008, Maibach, Roser-Renouf, and Leiserowitz found that a group they labeled “the Alarmed” (again, due to their high levels of concern about climate change) “are the segment most engaged in the issue of global warming. They are very convinced it is happening, human-caused, and a serious and urgent threat. The Alarmed are already making changes in their own lives and support an aggressive national response” (2009, 3, emphasis added). This group was far more likely than people with lower levels of concern over climate change to have engaged in consumer activism (by rewarding companies that support action to reduce global warming with their business, for example) or to have contacted elected officials to express their concern. Additionally, the authors found that “[w]hen asked which reason for action was most important to them personally, the Alarmed were most likely to select preventing the destruction of most life on the planet (31%)” (2009, 31)—a finding suggesting that for many in this group it is specifically the desire to avert catastrophe, rather than some other motivation, that encourages pro-environmental behavior. Taken together, these and other studies (cf. Semenza et al. 2008 and DerKarabetia, Stephenson, and Poggi 1996) provide important evidence that many of those who think environmental problems pose a severe threat practice some form of activism, rather than giving way to fatalistic resignation. National surveys give a good overview of the association between apocalypticism and activism among the general public, but they do not [End Page 6] provide sufficient ethnographic detail. To complement this broader picture I now turn to case studies, which provide greater insight into how adherents themselves understand what motivates their environmental behavior. When seeking a subset of environmentalists with apocalyptic beliefs, the radical wing is an obvious place to look. For example, many Earth First!ers believe that the collapse of industrial society is inevitable (Taylor 1994). At the same time, the majority are actively committed to preventing ecological disaster. As Earth First! co-founder Howie Wolke acknowledged, the two are directly connected: “As ecological calamity unravels the living fabric of the Earth, environmental radicalism has become both common and necessary” (1989, 29).3 This logic underlies efforts to preserve wilderness areas, which many radical environmentalists believe will serve as reservoirs of genetic diversity, helping to restore the planet after industrial society collapses (Taylor 1994). In addition to encouraging activism to preserve wilderness, apocalyptic beliefs also motivate practices such as “monkeywrenching,” or ecological sabotage, civil disobedience, and the more conventional “paper monkeywrenching” (lobbying, engaging in public information campaigns to shift legislative priorities, or using lawsuits when these tactics fail). Ultimately, while there are disagreements over what strategies will best achieve their desired goals, for most radical environmentalists, apocalypticism and activism are bound closely together. The connection between belief in impending disaster and environmental activism holds true for Wiccans as well. During fieldwork in the southeastern United States, for example, Shawn Arthur reported meeting “dozens of Wiccans who professed their apocalyptic millenarian beliefs to anyone who expressed interest, yet many others only quietly agreed with them without any further elaboration” (2008, 201). For this group, the coming disaster was understood as divine retribution, the result of an angry Earth Goddess preparing to punish humans for squandering her ecological gifts (Arthur 2008, 203). In light of Gaia’s impending revenge, Arthur found that Wiccans advocated both spiritual and material forms of activism. For example, practices such as Goddess worship, the use of herbal remedies for healing, and awareness of the body and its energies were considered important for initiating a more harmonious relationship with the earth (Arthur 2008, 207). As for material activism, Arthur notes [End Page 7] that the notion of environmental apocalypse played a key role in encouraging pro-environmental behavior: images of immanent [sic] ecological crisis and apocalyptic change often were utilized as motivating factors for developing an environmentally and ecologically conscious worldview; for stressing the importance of working for the Earth through a variety of practices, including environmental activism, garbage collecting, recycling, composting, and religious rituals; for learning sustainable living skills; and for developing a special relationship with the world as a divine entity. (2008, 212) What these studies and my own experiences in the environmentalist milieu4 suggest is that people who make a serious commitment to engaging in environmentally friendly behavior, people who move beyond making superficial changes to making substantial and permanent ones, are quite likely to subscribe to some form of the apocalyptic narrative. All this is not to say that apocalypticism directly or inevitably causes activism, or that believing catastrophe is imminent is the only reason people become activists. However, it is to say that activism and apocalypticism are associated for some people, and that this association is not arbitrary, for there is something uniquely powerful and compelling about the apocalyptic narrative. Plenty of people will hear it and ignore it, or find it implausible, or simply decide that if the situation really is so dire there is nothing they can do to prevent it from continuing to deteriorate. Yet to focus only on the ability of apocalyptic rhetoric to induce apathy, indifference or reactance is to ignore the evidence that it also fuels quite the opposite—grave concern, activism, and sometimes even outrage. It is also to ignore the movement’s history. From Silent Spring (Carson [1962] 2002) to The Limits to Growth (Meadows et al 1972) to The End of Nature (McKibben 1989), apocalyptic arguments have held a prominent place within environmental literature, topping best-seller lists and spreading the message far and wide that protecting the environment should be a societal priority. Thus, while it is not a style of argument that will be effective in convincing everyone to commit to the environmental cause (see Feinberg and Willer 2011), there does appear to be a close relationship between apocalyptic belief and activism among a certain minority. The next section explores the implications of that relationship further. [End Page 8] The Apocalyptic Narrative as a Framework for Moral Deliberation In discussing how apocalypticism functions within the environmental community, it will be helpful to analyze it as a type of narrative. I do so because the domain of narrative includes both the stories that people read and write, as well as those they tell and live by. By using narratives as data, scholars can analyze experiential and textual sources simultaneously (Polkinghorne 1988; Riessman 2000). To analyze environmental apocalypticism as a type of narrative is not to suggest that apocalyptics’ claims about the future are fictional. Rather, it is to highlight that the facts to which environmentalists appeal have been organized with particular goals in mind, goals which have necessarily shaped the selection and presentation of those facts. Compelling environmental writers do not simply list every known fact pertaining to the natural world, but instead select certain findings and place them within a larger interpretive framework. Alone, each fact has little meaning, but when woven into a larger narrative, a message emerges. This process of narrativization is essential if a message is to be **persuasive** (Killingsworth and Palmer 2000, 197), and has occurred not only in the rapidly expanding genre of environmental nonfiction, but in much scientific writing about the environment as well (Harré, Brockmeier, and Mühlhäusler 1999, 69). What defines narratives as such is their beginning-middle-end structure, their ability to “describe an action that begins, continues over a well-defined period of time, and finally draws to a definite close” (Cronon 1992, 1367). Here I will focus on the last of these elements, the ending, because anything we can learn about how endings function within narratives in general will be applicable to the apocalypse, the most final ending of all. An ending is essential in order for a story to be complete, but there is more to it than this. Endings are also key because they establish a story’s moral, the lesson it is supposed to impart upon the reader. In other words, to know the moral of the story, auditors must know the consequences of the actions depicted therein, so there can be no moral without an ending. To take a simple example, when we hear the story of the shepherd boy who falsely claims that a wolf is attacking his flock of sheep in order to entertain himself at his community’s expense, what makes the lesson clear is that when a wolf does attack his flock, the disenchanted town members refuse to come to his aid. By clearly illustrating how telling lies can have [End Page 9] unpleasant consequences for the perpetrator, the ending reveals the moral that lying is wrong. As Cronon explains, it is “[t]he difference between beginning and end [that] gives us our chance to extract a moral from the rhetorical landscape” (1992, 1370). Endings play a similar role in environmental stories. In Al Gore’s book Earth in the Balance (1992), for example, he devotes over a third of the book’s pages to presenting scientific evidence that disaster is imminent.5 As he sums it up, “Modern industrial civilization…is colliding violently with our planet’s ecological system. The ferocity of its assault on the earth is breathtaking, and the horrific consequences are occurring so quickly as to defy our capacity to recognize them” (1992, 269). He builds this argument so carefully precisely because if the ending does not seem credible, the moral he wants readers to draw from the story will not be compelling. If his readers are not convinced that the ending to this story of ecological misbehavior will be a debacle of colossal proportions, they will not become convinced that they need to dramatically alter their ecological behavior. Thus the vision of future catastrophe that Gore presents provides a crucial vantage point from which the present environmental situation can be understood as the result of a grand moral failure, and Gore’s readers are made aware of their obligations in light of it. Gore himself appreciates the importance of this recognition, arguing that “whether we realize it or not, we are now engaged in an epic battle to right the balance of our earth, and the tide of this battle will turn only when the majority of people in the world become sufficiently aroused by a shared sense of urgent danger to join an all-out effort” (1992, 269, emphasis added). Here, as in so many other stories, the ending must be in place for the moral to become clear. To say that endings are essential in order for stories to have morals is already to hint that stories alter behavior, that they can encourage action in the real world even as they invoke an **imaginary** one. This much is clear from Earth in the Balance (1992): Gore does not just want people to grasp a moral, to perceive some ethic in the abstract—he wants them change their behavior in the here and now. In constructing a narrative with this goal in mind, he is banking on the ability of powerful stories to motivate social change, to be, as Cronon puts it, “our chief moral compass in the world” (1992, 1375). Mark Johnson’s insightful synthesis of cognitive science and philosophy helps explain further how this process of moral guidance occurs. For [End Page 10] Johnson, narrative is fundamental to our experience of reality, “the most comprehensive means we have for constructing temporal syntheses that bind together and unify our past, present, and future into more or less meaningful patterns” (1993, 174). Narratives are also critical to our ability to reason morally, an activity which Johnson asserts is fundamentally imaginative. In this view, we use stories to imagine ourselves in different scenarios, exploring and evaluating the consequences of different possible actions in order to determine the right one. Moral deliberation is thus …an imaginative exploration of the possibilities for constructive action within a present situation. We have a problem to solve here and now (e.g., ‘What am I to do?’…. ‘How should I treat others?’), and we must try out various possible continuations of our narrative in search of the one that seems best to resolve the indeterminacy of our present situation. (1993, 180) Put another way, what cognitive science has revealed is that from an empirical perspective the process of moral deliberation entails constructing narratives rooted in our unique history and circumstances, rather than applying universal principles (such as Kant’s categorical imperative) to particular cases. That we use narratives to reason morally is not a result of conscious choice but of how human cognition works. That is, insofar as we experience ourselves as temporal beings, a narrative framework is necessary to organize, explain, and ultimately justify the many individual decisions that over time become a life. Formal principles may be useful in unambiguous textbook cases, but in real life “we can almost never decide (reflectively) how to act without considering the ways in which we can continue our narrative construction of our situation” (Johnson 1993, 160). Empirically speaking, “our moral reasoning is situated within our narrative understanding” (Johnson 1993, 180, italics in original). The observation that people use narratives to reason morally may help explain the association between environmental apocalypticism and activism. The function of the apocalyptic narrative may be that it helps adherents determine how to act by **providing a storyline** from which they can imaginatively sample, enabling them to assess the consequences of their actions. In order to answer the question, “Should I drive or walk to the store?” for example, they can reason, “If I walk, that will reduce my carbon footprint, which will help keep the ice caps from melting, saving humans and other species.” It is their access to this narrative of impending [End Page 11] disaster that makes such reasoning possible, for it provides a simple framework within which people can consider and eventually arrive at some conclusion about their moral obligations.6 More broadly, it can guide entire lives by providing a narrative frame of reference that imbues the individual’s experiences with meaning. For example, it is the context of looming anthropogenic apocalypse which suggests that dedicating one’s life to achieving a healthier relationship with the natural world is a worthwhile endeavor. Absent the apocalypse, choices such as limiting one’s travel to reduce greenhouse gas emissions, becoming vegetarian, working in the environmental sector (often for less compensation), or growing one’s own food could seem to be meaningless sacrifices. Within this context, on the other hand, such choices become essential features of the quest to live a moral life. The apocalyptic narrative is but one of many ways to tell the environmental story, yet it is one that seems **particularly well-suited to encouraging pro-environmental behavior**. First, the apocalyptic ending discloses certain everyday decisions as moral decisions. Without the narrative context of impending disaster, decisions such as whether to drive or walk to the store would be merely matters of convenience or preference. In the context of potentially disastrous consequences for valued places, people, and organisms, by contrast, such decisions become matters of right and wrong. Second, putting information about the environment into narrative form enables apocalyptics to link complex global environmental processes to their own lives, a perceptual technique Thomashow describes as “bringing the biosphere home” (2002). Developing this skill is essential because without that felt sense of connection to their own lived experience, people are much less likely to become convinced that it is incumbent upon them to act (2002, 2). Finally, the sheer magnitude of the impending disaster increases the feeling of responsibility to make good on one’s moral intuitions. By locating individuals within a drama of ultimate concern, the narrative frames their choices as cosmically important, and this feeling of urgency then helps to convert moral deliberation into action. With this conceptual overview in place, we can now examine more closely what the relationship between apocalypticism and moral reasoning looks like in practice. [End Page 12]