# Round 2

## 1ac

### 1AC---Innovation ADV

#### Advantage 1 is Innovation:

#### Standards-Setting Organizations (SSO’s) are industry members who jointly establish standards for information tech defined by the adoption of standard-essential patents (SEP’s), which are licensed to companies who wish to implement the tech in their product, called implementers, on Fair, Reasonable, and Non-Discriminatory (FRAND) terms. Current standards promote price gouging, FRAND enforcement is critical.

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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 – it lets firms engage in innovation-stifling conduct with antitrust impunity.

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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, which collapses FRAND integrity.

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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.

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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.

#### Absence of domestic 5G competition cedes leadership in technical standards to China.

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There is little doubt today that American superiority in the next generation of mobile communications, commonly called 5G, is a matter of extraordinary national concern. There is also little doubt that China is a strong competitor, already having outspent the United States by [$24 billion](https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-5g-deployment-imperative.pdf#page=3) and planning [$411 billion](https://www.scmp.com/tech/china-tech/article/2098948/china-plans-28-trillion-yuan-capital-expenditure-create-worlds) in 5G investment over the next decade. The Chinese government has also laid out multiple national plans for establishing the country as a leader in mobile technology, and the Chinese firm Huawei is poised to be the [top smartphone manufacturer](https://www.cnbc.com/2018/11/16/huawei-aims-to-overtake-samsung-as-no-1-smartphone-player-by-2020.html) by 2020.

And what are United States companies doing about this? Bickering over patents.

For years, the leading American supplier of advanced mobile communications chips has been the San Diego-based Qualcomm. The company has been an innovator of mobile technology, but it has also been a remarkable innovator of convoluted legal strategies. As an ongoing Federal Trade Commission [lawsuit alleges](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used), Qualcomm has used its dominant position as a chip supplier and its extensive patent holdings to weave an intricate web of patent licensing across the mobile industry. The effect of that complex licensing scheme, the FTC claims, has been to force competitor chipmakers out of the market and to extract concessions and high patent royalties from smartphone and mobile-device makers.

Qualcomm today faces only one major U.S. competitor—Intel, whose chips Apple recently [started using](https://www.cultofmac.com/484250/intel-reaping-rewards-apples-scrap-qualcomm/) instead of Qualcomm’s. Not surprisingly, Qualcomm has leveraged its patents to force a retaliatory investigation against Apple, the effect of which could be, as an administrative judge [recently determined](http://www.fosspatents.com/2018/10/itc-judge-didnt-buy-testimony-for-which.html), to boot Intel out of the mobile-chip market and leave Qualcomm as a monopoly.

It is hard to imagine that this infighting among Apple, Intel and Qualcomm is getting the United States very far in 5G, and it is harder to imagine that Qualcomm’s desired outcome would do so, either. The best path, instead, is the obvious one: allowing competition and expanding the number of firms working on 5G.

Competition encourages companies to out-innovate each other in order to grab market share. Of particular importance to 5G, competition leads to [better cybersecurity](https://morningconsult.com/opinions/in-the-race-to-5g-monopoly-considered-harmful/) in products, making them less vulnerable to hacking or misuse.

Competition is especially crucial when it comes to the technical standards that define how 5G works. These standards are the work of 3GPP, an international consortium of technology companies in the field. Chinese players such as Huawei and ZTE are major participants in 3GPP. Ensuring that 3GPP’s standards reflect American values requires having as many American companies at the negotiating table as possible—which is harder to achieve when those companies are trying to sue each other out of business.

Certainly patents themselves, as rewards for new inventions, are a driver of innovation in areas such as 5G. The problem, though, is not the existence of a patent system but the ever-expanding power of the patent laws, which encourage companies to pour dollars into complex patent licensing and assertion schemes—as companies like Qualcomm have done—rather than to perform the hard work of building new technologies. When innovation in patent strategy is more profitable than actual innovation, we lose the race to 5G and other technologies.

But don’t take my word for it. [Multiple members of Congress](https://www.patentprogress.org/2019/01/11/congress-weighs-in-on-qualcomm-and-apple-at-the-itc/), from both sides of the aisle, have denounced the use of patents to kick companies like Intel out of 5G development, predicting that such actions would “dampen the quality, innovation, competitive pricing, and in this case the preservation of a strong U.S. presence in the development of 5G and thus the national security of the United States.”

Or look to what China itself is doing. The Chinese government is handing out rewards left and right to encourage technology research and development. Indeed, it grants subsidies and financial benefits (ranging from the [ordinary](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2818503) to the [imperfect](https://funginstitute.berkeley.edu/wp-content/uploads/2013/12/patent_subsidy_Zhen.pdf) to the [bizarre](https://www.scmp.com/news/china/article/1681850/how-get-out-jail-early-china-buy-inventors-idea-and-patent-it)) to encourage its citizens to file for patents. But while China specifically encourages filing for patents, it does little to encourage using them: Patent infringement awards in court are peanuts—often only [five figures](https://scholarship.law.berkeley.edu/btlj/vol33/iss2/2/)—and most Chinese patent owners drop their patents [within five years](https://www.bloomberg.com/news/articles/2018-09-26/china-claims-more-patents-than-any-country-most-are-worthless) of getting them. The message in China is clear: You will be rewarded for innovating, but not for quibbling over patents.

The United States should take the same tack if it wants to match China in 5G. Ever-stronger patent rights encourage counterproductive disputes that are a drag on industry, a drag on research and development, and ultimately a drag on domestic competitiveness on the global stage. If America wants to lead in 5G, then it must clear the path for strong competition among leading American technology companies.

#### Standards leadership allows China to export digital authoritarianism.

Drew et al. 21, \*Dr Alexi Drew, Research Associate, The Policy Institute, King’s College London; (May 7th, 2021, “The Critical Geopolitics of Standards Setting”, https://www.transatlantic-dialogue-on-china.rusi.org/article/the-critical-geopolitics-of-standards-setting)

However, this previously ‘western’ domain is challenged by a Chinese bloc of private industry actors with centrally directed, strategic motivations for their efforts who have managed to leverage the flaws of this system for political and economic advantage.  The market-driven self-regulation model of technical standards has proven itself unsustainable given the geopolitical power achievable through the control of these standards. The marketised approach is easily abusable by a technologically developed nation-state with geopolitical intentions firmly in mind.

Obscurity Through Complexity

Technical standards have the immediate appearance of being both apolitical and ethically neutral. This seems to set them apart from the debate over standards of state behaviour in [cyber space concerning espionage and actions below the threshold of armed conflict](https://www.cfr.org/blog/unexpectedly-all-un-countries-agreed-cybersecurity-report-so-what). Yet, technological standards are unequivocally connected to normative practices of international behaviour and ethics. The extremely complex nature of the standards under consideration in bodies such as the International Organization for Standardization, the International Electrotechnical Commission (IEC), the International Telecommunications Union (ITU), and the Third Generation Partnership Project (3GPP) obscures the very tangible real-world impact that the standards they set have. The 3GPP is responsible for standards setting for mobile telecommunications. It covers everything from 5G through to autonomous vehicles and the Internet of Things. These are the bodies defining how the modern world is constructed.

On the one hand they appear quite benign, responsible for such banalities as the use of Universal Serial Bus (USB) connectors versus proprietary standards. This hardly seems a matter of national security importance. But the same process is responsible for what ultimately shape the basic operating parameters of facial recognition technology in closed circuit television systems, the level of centralised state control at the technical foundations of the internet, and the protections of personally identifiable data. These generate profound implications for international policy and ethics.

Internal Competition vs Strategic Direction

Technical standards setting processes have, historically, been dominated by private sector actors who have had both the capacity to develop a particular technology to the point of holding a significant market share, and the ability to use that market share to advocate for the standardisation of the technology in line with their own production. The market led approach has continued to be the prevailing model by which American companies have globalised the technical standards behind US dominated technological innovation. This privatised form of self-regulation for technology companies is only partially influenced by the approach taken within the EU where [some licensing of standards are controlled by state or EU led institutions.](https://www.ui.se/globalassets/ui.se-eng/publications/ui-publications/2019/ui-brief-no.-2-2019.pdf)

In contrast to this approach the Chinese model has involved a high level of state-oriented direction, oversight, and direct engagement on the creation and signing off technical standards. Efforts to harmonise and centralise technical standards domestically have become increasingly internationalised as the CCP takes this centralised, strategic approach to technical standards setting bodies such as the ITU, 3GPP, and IEC. Technical standards have also become an increasingly central component of the Digital Silk Road with the openly expressed goal of increasing uptake of Chinese technical standards in partner countries.

The implications of this clash between a system of technical standardisation that is driven by the market versus one driven by an authoritarian government subsidised model are a direct challenge to the development of free, open, and ethical technology. Standardisation mechanisms have become political, or rather there has been a gradual realisation of the political power to be gained from the control of technical standards. While the PRC might have come to this awareness first, the US and Europe have since had a rude awakening about the missed opportunity. The privatised model of technical standards setting favoured by European and US markets relies upon the dynamics of financial competition to regulate behaviour. This is in stark contrast to the statist Chinese model.

#### Causes global backsliding.

Kendall-Taylor et. al 20 \*Andrea Kendall-Taylor, senior fellow and director of the Transatlantic Security Program at the Center for a New American Security, co-author of Democracies and Authoritarian Regimes; Erica Frantz is Assistant Professor of Political Science at Michigan State University; Joseph Wright is Professor of Political Science at Pennsylvania State University; (March/April 2020, “The Digital Dictators,” Foreign Affairs, <https://www.foreignaffairs.com/articles/china/2020-02-06/digital-dictators>)

The risk that technology will usher in a wave of authoritarianism is all the more concerning because our own empirical research has indicated that beyond buttressing autocracies, digital tools are associated with an increased risk of democratic backsliding in fragile democracies. New technologies are particularly dangerous for weak democracies because many of these digital tools are dual use: technology can enhance government efficiency and provide the capacity to address challenges such as crime and terrorism, but no matter the intentions with which governments initially acquire such technology, they can also use these tools to muzzle and restrict the activities of their opponents.

#### Democracy solves a litany of existential threats.

Diamond 19, Professor of Political Science and Sociology at Stanford University, Senior Fellow at the Hoover Institution, Senior Fellow at the Freeman Spogli Institute for International Studies, PhD in Sociology from Stanford University, (Dr. Larry, Ill Winds: Saving Democracy from Russian Rage, Chinese Ambition, and American Complacency, p. 199-202)

The most obvious response to the ill winds blowing from the world’s autocracies is to help the winds of freedom blowing in the other direction. The democracies of the West cannot save themselves if they do not stand with democrats around the world. This is truer now than ever, for several reasons. We live in a globalized world, one in which models, trends, and ideas cascade across borders. Any wind of change may gather quickly and blow with gale force. People everywhere form ideas about how to govern—or simply about which forms of government and sources of power may be irresistible—based on what they see happening elsewhere. We are now immersed in a fierce global contest of ideas, information, and norms. In the digital age, that contest is moving at lightning speed, shaping how people think about their political systems and the way the world runs. As doubts about and threats to democracy are mounting in the West, this is not a contest that the democracies can afford to lose. Globalization, with its flows of trade and information, raises the stakes for us in another way. Authoritarian and badly governed regimes increasingly pose a direct threat to popular sovereignty and the rule of law in our own democracies. Covert flows of money and influence are subverting and corrupting our democratic processes and institutions. They will not stop just because Americans and others pretend that we have no stake in the future of freedom in the world. If we want to defend the core principles of self-government, transparency, and accountability in our own democracies, we have no choice but to promote them globally. It is not enough to say that dictatorship is bad and that democracy, however flawed, is still better. Popular enthusiasm for a lesser evil cannot be sustained indefinitely. People need the inspiration of a positive vision. Democracy must demonstrate that it is a just and fair political system that advances humane values and the common good. To make our republics more perfect, established democracies must not only adopt reforms to more fully include and empower their own citizens. They must also support people, groups, and institutions struggling to achieve democratic values elsewhere. The best way to counter Russian rage and Chinese ambition is to show that Moscow and Beijing are on the wrong side of history; that people everywhere yearn to be free; and that they can make freedom work to achieve a more just, sustainable, and prosperous society. In our networked age, both idealism and the harder imperatives of global power and security argue for more democracy, not less. For one thing, if we do not worry about the quality of governance in lower-income countries, we will face more and more troubled and failing states. Famine and genocide are the curse of authoritarian states, not democratic ones. Outright state collapse is the ultimate, bitter fruit of tyranny. When countries like Syria, Libya, and Afghanistan descend into civil war; when poor states in Africa cannot generate jobs and improve their citizens’ lives due to rule by corrupt and callous strongmen; when Central American societies are held hostage by brutal gangs and kleptocratic rulers, people flee—and wash up on the shores of the democracies. Europe and the United States cannot withstand the rising pressures of immigration unless they work to support better, more stable and accountable government in troubled countries. The world has simply grown too small, too flat, and too fast to wall off rotten states and pretend they are on some other planet. Hard security interests are at stake. As even the Trump administration’s 2017 National Security Strategy makes clear, the main threats to U.S. national security all stem from authoritarianism, whether in the form of tyrannies from Russia and China to Iran and North Korea or in the guise of antidemocratic terrorist movements such as ISIS.1 By supporting the development of democracy around the world, we can deny these authoritarian adversaries the geopolitical running room they seek. Just as Russia, China, and Iran are trying to undermine democracies to bend other countries to their will, so too can we contain these autocrats’ ambitions by helping other countries build effective, resilient democracies that can withstand the dictators’ malevolence. Of course, democratically elected governments with open societies will not support the American line on every issue. But no free society wants to mortgage its future to another country. The American national interest would best be secured by a pluralistic world of free countries—one in which autocrats can no longer use corruption and coercion to gobble up resources, alliances, and territory. If you look back over our history to see who has posed a threat to the United States and our allies, it has always been authoritarian regimes and empires. As political scientists have long noted, no two democracies have ever gone to war with each other—ever. It is not the democracies of the world that are supporting international terrorism, proliferating weapons of mass destruction, or threatening the territory of their neighbors.

#### 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.

### 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.

Duan 20, \*Charles Duan is a senior fellow and associate director of tech & innovation policy at the R Street Institute, where he focuses his research on intellectual property issues; (2020, “OF MONOPOLIES AND MONOCULTURES: THE INTERSECTION OF PATENTS AND NATIONAL SECURITY”, Santa Clara High Technology Law Journal, 36(4), 369-405. Retrieved from <https://www2.lib.ku.edu/login?url=https://www.proquest.com/scholarly-journals/monopolies-monocultures-intersection-patents/docview/2442966690/se-2?accountid=14556>)

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.

### 1AC---Solvency

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

#### The plan requires SSO’s to administer reasonable action to prohibit ex post opportunism---that strengthens FRAND effectiveness while enabling SEP holders to capture appropriate royalties---which is the best competition-innovation balance.

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

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.

#### Threatening antitrust liability lures SSO’s into adopting best practices.

Lemley & Shapiro 13, \*Mark Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business, University of California at Berkeley and a Senior Consultant at Charles River Associates; (2013, “A SIMPLE APPROACH TO SETTING REASONABLE ROYALTIES FOR STANDARD-ESSENTIAL PATENTS”, (https://faculty.haas.berkeley.edu/shapiro/frand.pdf)

Under our approach, many of these issues should become moot, since the patentee cannot obtain an injunction (or transfer the patent to someone who can) against a willing licensee, and since competitors are not involved in jointly setting the reasonable royalty rate. If SSOs set clear, reasonable rules following the best practices we recommend, and parties follow those rules, there should be little or no need for antitrust to intervene. Indeed, even the risk of non-disclosure of a patent is lessened, since the patentee has committed to license its essential patents whether or not it discloses them. For the most part, the rules we have described are self-executing, meaning that even if a party tries to break the rules set by the SSO there still may be no need for antitrust to intervene. Thus, we suggest that parties who abide by these procedures—patentees, implementers, and the SSOs themselves—should be immune from antitrust liability for activities that merely follow those rules.107 They have entered into an arrangement that is on balance good for competition, one that allows patentees to receive reasonable royalties but prevents holdup and reduces the risk of monopolization by trickery.

The fact that antitrust remains a last resort available when SSOs don’t follow best practices may have two practical benefits, however. First, under our approach the promise of avoiding the risk of antitrust liability will be a powerful incentive for both SSOs and patent owners to adopt the best practices we propose. Second, the risk of antitrust liability may be relevant when an individual patentee wants to adopt best practices but the SSO governing the standard has not yet done so. We propose that a patentee that unilaterally commits to the FRAND procedures we describe here should be immune from antitrust liability for following these procedures.108 A patentee’s unilateral binding commitment to arbitration could be enforced whether or not it was elicited by an SSO. Thus, just as the prospect of antitrust immunity might lure SSOs to adopt best practices, it might also lure patentees to implement those practices even if the SSO has not done so. Given the large number of standard-essential patents based on preexisting standards,109 and given that SSOs tend to update their IP rules rather slowly,110 this is not a small matter.

#### Only antitrust enforcement creates a consumer-action feature that counterbalances SSO’s conspiratorial incentives---private action fails.

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

2. Why Antitrust Enforcement Is Necessary

Some SSO members have an interest in ensuring that the SSO takes steps to minimize the potential harms from the SEP holders’ monopoly power, and this undoubtedly explains in part why most SSOs have adopted FRAND policies or similar requirements. But, as shown in the economic model in the Appendix,73 SSOs cannot in general be counted on to adopt effective FRAND policies. The bases for this conclusion, which is central to our argument for the applicability of Section 1 to SSO FRAND rules, can be summarized as follows.74

First, the SSO members collectively have an interest in permitting SEP holders to charge supracompetitive royalties that elevate the downstream price of compliant devices to the monopoly level. Doing so will enable the members in aggregate to collect increased revenues from consumers, and thus to generate increased profits that in theory could be shared by all the members. In other words, supracompetitive royalties can enrich industry participants as a group at the expense of final consumers. This fact alone should serve as a clear and strong signal regarding the dangers of counting on SSOs to implement effective FRAND policies: if the SSO members negotiate efficiently, the outcome will be just as bad for consumers as if the members agreed to fix downstream prices.75 The fundamental problem is that final consumers are not at the table

when the SSO rules are negotiated.

Second, SSO members that own SEPs but earn little or no profits as implementers have a powerful self-interest in being able to exercise the ex post monopoly power associated with their SEPs. Because SSO policies are usually determined by a consensus process, these members will likely be able to block the adoption of fully effective FRAND policies. Moreover, these SSO members often have the greatest interest in SSO patent policies. Since much of their income may be attributable to patent licensing, they can be expected to devote substantial resources to block the adoption of FRAND policies that effectively prevent patent holdup.

Third, even SSO members that earn significant profits as implementers may have mixed incentives if they also own SEPs, which can also lead to weak or in-effective FRAND rules. In the Appendix, we show that, if the requisite share of votes in the SSO are cast by firms whose share of SEP royalties is at least as large as their share of downstream profits, and if these firms can coordinate their voting over the FRAND rules, then an SSO unconstrained by antitrust laws will establish FRAND rules leading to an outcome no better for consumers than would result from an integrated monopolist controlling all SEPs and all downstream sales.76

Fourth, even SSO members that are downstream implementers and own few

, if any, SEPs may have only a modest interest in promoting effective policies to restrict ex post opportunism. Because all implementers will be subject to the opportunism, all of them will face increased licensing costs, and therefore will likely be able to pass on most or all of the increased costs to their customers.77 Furthermore, these implementers might not be especially active or effective in the standard-setting process for free-riding or public-good reasons, especially if SEP royalties constitute only a relatively small portion of the costs of their standard-implementing products. Public choice theory predicts that the highly motivated SEP holders are likely to have the greatest influence over patent policies.

Empirical evidence bears out these concerns. As a starting point, we find it striking that SSO FRAND rules are almost always quite vague.78 Notably, SSOs in which SEP holders are more prevalent tend to have weaker FRAND rules.79 Further, to our knowledge, SSOs have made almost no effort to enforce their FRAND rules and have, instead, left enforcement efforts to others.80 This evidence raises serious doubts about the effectiveness of the existing FRAND rules in preventing ex post opportunism.

# 2AC

## CP---States

### 2AC---Preemption

#### The Ninth Circuit imposed court-order limitations on antitrust law to preserve its balance with patent law.

Martino et al. 20, \*[Matthew M. Martino](https://www.skadden.com/professionals/m/martino-matthew-m) [Tara L. Reinhart](https://www.skadden.com/professionals/r/reinhart-tara-l) [Steven C. Sunshine](https://www.skadden.com/professionals/s/sunshine-steven-c) [Julia K. York](https://www.skadden.com/professionals/y/york-julia-k), works with clients at Skadden, Arps, Slate, Meagher & Flom LLP; (August 14th, 2020, “Ninth Circuit Strikes Down Sweeping Injunction Against Qualcomm and Reins In Expansive Interpretation of Sherman Act”, https://www.skadden.com/insights/publications/2020/08/ninth-circuit-strikes-down-sweeping-injunction)

In its highly anticipated decision, the Ninth Circuit panel unanimously rejected the lower court’s reasoning, vacating the judgment and reversing the worldwide injunction against Qualcomm. The panel concluded that the district court had erroneously imposed the antitrust duty to deal on Qualcomm, had impermissibly looked outside the relevant antitrust market in order to infer an anticompetitive act and had relied on outdated evidence of agreements that were terminated before the suit was filed to justify a broad, forward-looking global injunction. The Ninth Circuit further rejected the argument that a SEP holder’s violation of FRAND commitments could independently create antitrust liability, instead pointing to patent and contract law as sources for potential remedies. The decision reflects a considered effort to rei

n in the district court’s expansive interpretation of general antitrust principles and their specific application to SEP holders, as well as recognition that the antitrust laws aim to preserve companies’ incentives to innovate and compete. Recognizing that while “[a]nticompetitive behavior is illegal under federal antitrust law[,]” the panel was adamant that “[h]ypercompetitive behavior is not.”[7](https://www.skadden.com/insights/publications/2020/08/ninth-circuit-strikes-down-sweeping-injunction" \l "ftn7)

Rejection of District Court’s Expansive Interpretation of Antitrust Laws

The Ninth Circuit decision contains several notable conclusions regarding the scope of Section 2 of the Sherman Act and what constitutes cognizable antitrust harm.

#### State efforts to impose greater antitrust liability than established by federal courts will be preempted to protect that balance.

Samp 14, \*Richard A. Samp is the chief counsel for Washington Legal Foundation (WLF), a non-profit, public interest law firm in Washington, D.C. WLF filed an amicus brief in support of Love Terminal Partners. (2014, “The Role of State Antitrust Law in the Aftermath of Actavis”, https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1062&context=mjlst)

V. ACTAVIS’S PREEMPTIVE EFFECT

Application of state antitrust law to reverse payment settlements is not merely a hypothetical possibility. There are a fair number of pending lawsuits that challenge reverse payment settlements on state-law grounds. The California Supreme Court has agreed to review one such suit.74 In seeking affirmance of the appeals court’s dismissal of the suit, the defendants argue inter alia that the suit is preempted by federal law.75

As noted above, there is precedent for a finding that state antitrust law is preempted to the extent that it conflicts with the policy underlying a federal statute.76 Moreover, in the context of patent law, federal courts have not hesitated to preempt state laws that the courts deem to stand as an obstacle to accomplishing Congress’s objectives (i.e., encouraging efforts to develop new and useful products).77 To the extent that any portions of Actavis’s holding can be deemed to reflect the Court’s perception of Congress’s new-product-development objectives, a state law is preempted if it is inconsistent with that holding and seeks to impose a greater degree of antitrust liability on the parties to a reverse payment settlement.

Actavis’s treatment of settlements involving a compromise entry date appears to meet that description. Actavis held that federal antitrust liability could not arise from a settlement in which the generic manufacturer agrees not compete for a number of years and in return is rewarded with an exclusive license to market its product several years in advance of the patent’s expiration date.78 Accordingly, states are not permitted to impose antitrust liability under similar circumstances because doing so would upset the balance that, according to Actavis, Congress sought to achieve between antitrust and patent law.

Other issues left open by Actavis are likely to be answered in the years ahead. For example, the Supreme Court did not specify whether noncash benefits received by a generic manufacturer in connection with a patent settlement can ever serve as the basis for federal antitrust liability. If the Supreme Court eventually answers that question by stating: “No, federal antitrust law will not examine settlement benefits other than cash that flow to the infringing party,” then it is likely that state antitrust law would be required to conform to that rule. The potential grounds for such a ruling (a desire both to promote settlement of patent disputes and to uphold reliance interests in existing patents) are based largely on values embedded in federal patent law.

There is little reason to believe, however, that the Court would prevent application of state antitrust law to patent settlement agreements where state law is fully consistent with federal antitrust law. Even in areas subject to extensive federal regulation, the Supreme Court has upheld the authority of states to engage in parallel regulation that is not inconsistent with the federal regulation.79 Unless the Court were to determine, as in Connell,80 that states could not be trusted to properly accommodate the objectives of the federal statute at issue (here, federal patent law), there is no reason to conclude that Congress would not have wanted states to be permitted to police the same sorts of anticompetitive conduct that is policed by federal antitrust law. Moreover, states are likely free to impose greater penalties on the proscribed conduct than is available under federal law. As the Court explained in California v. ARC America Corp., state antitrust law is not required to adhere to the same set of sanctions imposed by federal antitrust law.81

It seems reasonably clear, however, that Actavis prohibits states from adopting the procedural devices rejected by the U.S. Supreme Court—either a per se condemnation of reverse payment settlements or a presumption of illegality accompanied by “quick look” review. The Supreme Court rejected those approaches because it determined that in many cases there might well be pro-competitive economic justifications for reverse payment settlements and that presuming their illegality could result in the suppression of economically useful conduct.82 State antitrust laws that adopted the FTC’s proposed presumption of illegality would be subject to similar criticism, and thus would likely be impliedly preempted as inconsistent with the careful balance between antitrust and patent law established by Actavis.

CONCLUSION

Because Actavis left so many questions unanswered regarding the application of federal antitrust law to patent settlement agreements, the extent to which federal law preempts the application of state antitrust law to such agreements remains similarly unsettled. One can be reasonably confident that if private plaintiffs become dissatisfied with the results of pending litigation under federal antitrust law, they will turn with increasing frequency to state antitrust law as an alternative remedy. Even if state law ends up doing no more than “parallel” federal antitrust law, defendants are likely to incur substantial litigation costs fending off such state claims in the years to come.

### 1AR—Preemption

#### Precedent evinces that state antitrust cause of action will be preempted if alleged tortious conduct is even governed by patent law.

Paul Gugliuzza 15. Associate Professor, Boston University School of Law. 2015. “Patent Trolls and Preemption.” https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1087&context=faculty\_scholarship

The Federal Circuit first rejected the defendants’ field preemption argument, noting that “state unfair competition law regulates conduct in a different field from federal patent law” and that, in any case, “conflict preemption is a more precise means of determining which state law causes of action are preempted than the blunt tool of field preemption.”272 Turning to conflict preemption, the Federal Circuit wrote, consistent with the Supreme Court’s Supremacy Clause-based preemption decisions, that the key question was “whether the state law actions frustrate[d] ‘the accomplishment and execution of the full purposes and objectives of Congress.’”273 But rather than considering the purposes of federal patent law, such as those identified in Kewanee and Bonito Boats (as well as by the Federal Circuit itself in Dow), the court stated that to determine preemption, “we assess a defendant’s allegedly tortious conduct.”274 The court elaborated: “If a plaintiff bases its tort action on conduct that is protected or governed by federal patent law, then the plaintiff may not invoke the state law remedy, which must be preempted for conflict with federal patent law.”275 Then, citing Mallinckrodt, the court noted: “[F]ederal patent law bars the imposition of liability for publicizing a patent in the marketplace unless the plaintiff can show that the patent holder acted in bad faith.”276 Ultimately, the court remanded the case for the district court to analyze preemption under the bad faith standard.277

#### Any confliction with patent law will be preempted.

Richard A. Samp 14, Chief Counsel of the Washington Legal Foundation, a nonprofit public interest law firm located in Washington, D.C., graduate of Harvard College and the University of Michigan Law School, 2014, “The Role of State Antitrust Law in the Aftermath of Actavis,” https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1062&context=mjlst

On the other hand, state antitrust laws—like all state laws—are subject to the restrictions imposed by the Supremacy Clause of the U.S. Constitution,15 and are impliedly preempted to the extent that they conflict with federal law.16 Such a conflict arises when “compliance with both federal and state regulations is a physical impossibility,”17 or when a state law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.”18 On a number of occasions, the Supreme Court has concluded that state antitrust law is preempted because it conflicts with a federal statute other than federal antitrust law.19 The Court has been particularly quick to find preemption when state antitrust law has an impact on labor law, an area in which federal law is pervasive.20 Indeed, on at least one occasion, the Court found that a claim arising under state antitrust law was preempted by federal labor law even though the Court concluded that the conduct that gave rise to the state claim could proceed as a claim under federal antitrust law.21 The Court explained that “Congress and this Court have carefully tailored the antitrust statutes to avoid conflict with the labor policy favoring lawful employee organization, not only by delineating exemptions from antitrust coverage but also by adjusting the scope of the antitrust remedies themselves.”22 The Court said that state antitrust laws “generally have not been subjected to this process of accommodation” and thus that “[t]he use of state antitrust law . . . [must] be pre-empted because it creates a substantial risk of conflict with policies central to federal labor law.”23 Accordingly, in any challenge to a “reverse payment” patent settlement arising under state antitrust law, a court will likely be required to address whether the claim conflicts with the “balance” between federal antitrust law and federal patent law established by the Supreme Court’s Actavis decision. If such state-law antitrust claims stand as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress in adopting the patent laws, it will be preempted by federal law.

## DA---Court Clog

### 2AC---AT: Court Clog DA---TL

**Court clog is fearmongering.**

**Stern 03** – J.D. Candidate, 2004, University of Pennsylvania Law School; B.A., 2001, The Johns Hopkins University. (Toby J., “FEDERAL JUDGES AND FEARING THE "FLOODGATES OF LITIGATION," UPenn Journal of Law, 2004, <https://www.law.upenn.edu/journals/conlaw/articles/volume6/issue2/Stern6U.Pa.J.Const.L.377(2003).pdf)>

One of the most easily identifiable problems with the floodgates argument is that it is rarely, if ever, followed by a true analysis of the potential litigation of which it speaks. That is, one response to a floodgates argument might be, "Are you sure that a contrary position would yield a flood of litigation?" 82 This criticism is frequently leveled against the floodgates argument, especially in the realm of tort litigation. For example, as one commentator has argued: The "floodgates of litigation" argument has proven wrong time and again. The lifting of the "impact" rule in rewarding damages for mental anguish, allowing third parties to recover under contracts, and the recognition of the right to privacy, were all prophesied to overwhelm the courts with frivolous claims. **They have not**. This argument, one should think, is relatively strong. While the floodgates argument is generally based on policy considerations,8 5 policy arguments are rarely so indeterminate. While moral arguments are certainly not precise--one cannot quantify, say, "fairness" or 'justice"-they are simply used differently. That is, when a judge says that a decision "promote [s] justice,"8 6 ~~he or she~~ [they] is not speaking about a tangible, actual result. In contrast, when a judge expresses that a decision will open the floodgates of litigation, he or she [they] is saying that there will be actual, cognizable caseload results from the decision. Given how often the floodgates do not open when we are warned that they will,"' making the argument without a proper foundation is dangerous. While there certainly are situations in which a judge should consider the implications of a decision on ~~his or her~~ [their] caseload, 8 doing so without considering the factual bases of those implications is problematic.'8 9 And while uncertainty is an unavoidable part of the law,' 90 the language with which the floodgates argument is regularly employed expresses anything but conjecture and uncertainty. The arguments are forceful; they are intended to conjure "[i] mages of a destructive, elemental force."'9' After all, as Judge Posner notes, "So irregular has been the growth of the caseloads of each of the three tiers of the federal judiciary in the past, and so many and poorly understood are the causes of changes in judicial caseloads, that it is impossible to make responsible predictions about future changes.' 92 The failure of judges to recognize this limitation of the argument reduces the weight afforded thereto.

**More evidence.**

**Stern, 03** – J.D. Candidate, 2004, University of Pennsylvania Law School; B.A., 2001, The Johns Hopkins University. (Toby J., “FEDERAL JUDGES AND FEARING THE "FLOODGATES OF LITIGATION," UPenn Journal of Law, 2004, <https://www.law.upenn.edu/journals/conlaw/articles/volume6/issue2/Stern6U.Pa.J.Const.L.377(2003).pdf)>

Judge Posner undoubtedly was correct in noting that the question of whether judges should consider caseload when deciding cases is of some moment" because of the high caseload levels in the federal courts.00 In arguing that the "floodgates of litigation" argument has few valid uses, I have not ignored the fact that the federal courts are quite busy. Nonetheless, I have tried to create a compelling case against using the fear of the floodgates of litigation in judicial opinions as a remedy for the caseload problem. The argument is too flawed to continue to be used in the judicial opinions of the federal courts. The **pragmatic uncertainties** and **inconsistencies**,3 0 0 **separation of powers problems**,30 ' **and shaky** (and in most cases, absent) **statutory basis**° ' combine to outweigh any beneficial effect the argument might have.

### 1NC---!D---ABR

#### ABR is gradual, slow, and will be addressed---reject scary-sounding headlines

Smith 16, PhD molecular biologist, former R&D director at MicroPhage and SomaLogic. (Drew, 6-14-16, “The Myth Of The Post-Antibiotic Era”, <https://www.forbes.com/sites/quora/2016/06/14/the-myth-of-the-post-antibiotic-era/#db027696fa83>)

Right now, drug resistant infections are mainly a threat to those that are already sick and/or in medical facilities. But, if we continue down this path, mundane infections in the otherwise healthy could someday morph into life-threatening ordeals, and simple medical procedures and surgeries may be skipped to avoid risk of infection. However, while this threat is real, it’s important to keep in mind that this is an ongoing, gradual challenge; it’s extremely unlikely that a single event will herald with complete certainty the abrupt end of modern medicine as we know it. In this context, those scary headlines are inappropriate, if not numbing and counterproductive. In May, Ars wrote about some alarmist and inaccurate news stories dealing with a newly identified type of drug resistance—one that makes bacteria resistant to a last-resort antibiotic called colistin and can spread between bacteria easily. The headlines blared that it was the “first” time such a dastardly microbe had seeped into the US—which is not true. And they suggested that it would certainly mark the end of antibiotics—also not true. This week, scientists provided updates on tracking that type of resistance, and of course some alarmist headlines followed. Yet, the new data actually suggests that a tempering of concerns about this particular resistance may be in order. It turns out that this “dreaded,” “scary,” “nightmare” of a drug-resistant microbe has been in the US for more than a year and elsewhere in the world since as far back as 2005—it’s just that nobody noticed it. And nobody noticed it because so far it hasn’t been the dreaded, scary nightmare some have feared. “It’s not a huge cause for concern,” Mariana Castanheira, lead author of one of this week’s resistance updates, told Ars. Castanheira is the director for Molecular and Microbiology at JMI Laboratories, a private company that monitors drug resistance microbes in hospitals and medical settings. They and others are finding this new type of resistance now simply because they’re looking for it, she said. Castanheira explains that people initially started digging for this new type of drug resistance—a gene called mcr-1—out of concern that it makes bacteria resistant to the antibiotic colistin, which is a relatively toxic drug used only when nearly all others have failed against a multi-drug resistant infection. Bacteria have shown up with colistin resistance before—in fact, many times in the US and elsewhere around the world. But in those cases, the genes were embedded in the bacteria’s chromosomes and generally passed down through generations. The mcr-1 resistance gene, on the other hand, seems to always sit on a plasmid, a small loop of DNA that bacteria can readily pass around to neighbors. If colistin-resistant bacteria shared their mcr-1 plasmid with others that are already resistant to lots of antibiotics, they could create a long-feared invincible germ—a “pan-resistant” bacteria. “Doesn’t scare me” So far that doesn’t seem to be happening, though, Castanheira said. In more than a decade of skulking around, mcr-1 has made its way into bacteria in animals, people, and soil all over the world. Yet, all of the mcr-1 carrying microbes examined have been susceptible to at least one antibiotic—and often several.

### 1NC---!D---Disease

#### No extinction from disease.

Barratt 17, PhD in Pure Mathematics, Lecturer in Mathematics at Oxford, Research Associate at the Future of Humanity Institute. (Owen Cotton-Barratt et al, “Existential Risk: Diplomacy and Governance”, pg. 9, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>)

1.1.3 Engineered pandemics

For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are very unlikely to cause human extinction. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, less than 4% (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic.

One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

### 1NC---Industry High---Biotech

#### Biotech innovation and industry are high because of COVID.

Brennan 20 (Paul, 9-23-2020, "Therapeutics Innovation in the Era of a Pandemic", *Grit Daily News*, https://gritdaily.com/therapeutics-innovation-in-the-era-of-a-pandemic/)

Pharma and biotech companies have demonstrated a rapid and powerful response to the COVID-19 pandemic with biopharmaceutical innovators leading the charge in the fight. A rush of investor money is placing bets on biotech companies with the best odds of making it to the vaccine finish line. What’s the impact on biotech companies researching for cure pathways for other serious diseases, such as cancer, multiple sclerosis, Alzheimer’s disease, and more?

When the pandemic abates, with vaccines and optimal care treatments in place, other diseases will still be robbing lives and diminishing people’s quality of life. How bumpy is the road for biotech companies working on breakthroughs for non-COVID-19 diseases? Here’s what biotech companies are wrestling with during this challenging time:

Access to Capital

Global biotech ventures raised $18.8 billion in 2019, which was up from $17 billion in 2018, according to BioCentury’s BCIQ database. While there’s been a fear of a slowdown in venture financing, according to BioCentury, that fear has been largely unfounded as “fund-raising in 1Q20 is on par with previous quarters, with $5.71 billion raised, compared with the quarterly average of $5.93 billion in 2019, from 160 financings, compared with an average of 162 financings per quarter last year.

While we can estimate that significant capital is being raised for pandemic-related ventures, biotech companies outside of this spectrum are also being funded. However, it must be very difficult for companies that are trying to raise their first round. Connecting with investors over a Zoom call works well if you are already acquainted, but for first-time introductions the ‘virtual’ dynamic makes it very difficult to build trust and relationships.

Trials and Tribulations of Clinical Trials

According to BioPharmaDive, since March 2020, nearly 100 companies and 240 trials have experienced disruptions. As such, the COVID-19 pandemic threatens to set back non-COVID-19 clinical trial research several years which could result in stalled progress on experimental medicines for other diseases.

Phase I studies of a new drug generally involve healthy people and look to find the highest dose of the new treatment that can be given safely without causing severe side effects. Currently, several companies initiating their a Phase 1 non-pandemic related trials in the U.S. are being delayed as the clinics and supporting hospitals that conduct Phase 1 trials are prioritizing treating patients with COVID-19. Fortunately, there are some promising alternatives. Companies engaged in Phase 1 trials are starting to get creative and looking into other countries not as afflicted by the pandemic, such as Canada and Australia. The pandemic highlights the advantage for study decentralization in the face of a crisis.

Phase 2 studies focus test treatments that have been found to be safe in Phase I but now need a larger group of human subjects to assess efficacy and side effects. As Phase 2 trials are coordinated with hospitals and medical centers, many of which are focused on pandemic-related treatments, there have been major delays for biotech companies in this phase of study. The hardest hit category of therapeutics is for non-urgent therapies, but that are still important for quality of life and long-term health. In the current environment, patients are just not visiting hospitals for elective and preventative treatments, and as such the access to these patients for clinical trials is limited.

Discovery Stage Companies are Also Affected

Not all biotech companies have progressed their research to clinical trials, and for these companies most of their research is conducted in labs. For the first couple of months after the lockdown, most lab work was put on hold while the companies or their vendors learned how to manage their social distancing protocols. Whilst many labs are now back to work, many are not yet working to full capacity, and in some cases non-COVID-19 researchers are having a difficult time getting access to their studies when the labs share space with pandemic researchers.

Biotech is Ready for Its Close-up

As people around the world are turning to biotechnology and pharmaceutical companies for solutions for the COVID-19 pandemic, there is renewed respect for the sector. If an effective vaccine becomes available, “the perception of the pharmaceutical and life sciences industry is positioned to shift dramatically from near the bottom of favorability polls currently to much higher. This will impact policymaking, industry communications, and beyond,” reads the State of Possible 2025 Report from MassBio.

COVID-19 is demonstrating the importance of the biotechnology sector to society, as even anti-vaccine protestors are humbled by the advent of an earth-shaking pandemic. A respect for the production of life-saving technologies will translate to our world being more prepared for future new diseases with a renewed focus on cure pathways for uncured diseases.

As countries move toward normalcy, many emerging biotech companies who have not pivoted to focus on the pandemic, are weathering the storm with therapeutic innovations on the horizon. For those of us lucky enough to work in biotech, our work is far more than just a job. We are working on solutions to help humankind live longer and healthier.

## K---Fem IR

### 2AC---Framework

#### Hauntology proves the need for framework to weigh the aff—their avoidance of clash double-turns their method because it prevents the negative from haunting their pre-formulated opinions

Minister 16 – Professor of Philosophy @ Augustana

(Stephen, “Living Together in a Haunted House,” Last updated, http://www.augie.edu/living-together-haunted-house)

“I am going to say some things that will make you uncomfortable. If you haven’t been made uncomfortable, you haven’t really had a cross-cultural experience.” Thus began my class’s conversation with Raymundo Sánchez Barraza on a cool January morning in the mountains of Chiapas. Raymundo’s intention was not to scandalize us for his own amusement, but simply to share with us a glimpse of what the world looks like from the perspective of indigenous communities in southern Mexico. He quite rightly saw that for us, a group from Augustana College, to take this perspective seriously would mean the discomfort of having some of our beliefs, values, and practices called into question. To truly engage another perspective we had to risk the discomfort of having ours challenged. Of course, we need not leave our own country to experience this sort of discomfort as even here we encounter a variety of perspectives, religious and otherwise. In honor of Reformation Day, which of course is also Halloween, I would like to reflect a bit on the important role that being uncomfortable, unsettled, and even haunted plays in genuine engagement with others. This may seem an unlikely topic for a philosopher as my discipline has long been concerned with ontology, that is, the attempt to determine what things really exist and what they are like. Is there a God and if so what is God like? Do humans have souls and what would it mean if we do? Why is there something rather than nothing? Recently, though, thinkers like Jacques Derrida and John Caputo have suggested that our answers to such questions should always be troubled by a “hauntology.” We should be haunted, they suggest, by the diversity of answers people give to these questions, by the existence of a plurality of perspectives, by disagreement among thoughtful, sincere people. We should be haunted by the thought that had we been born at a different time or in a different society, then our beliefs would likely be quite different, that others’ beliefs which seem so strange to us might have been our own. For, once we realize this — genuinely, internally realizing it — must we not give up the complacent assumption that our beliefs must be right, that of course they are better than other beliefs? Must we not always be a little spooked by the perpetual possibility that we may be wrong? The point of such a hauntology is not to engender a skepticism that would reject all beliefs, nor a relativism that would reduce all beliefs to mere opinion, nor even an agnosticism that would withhold belief pending further evidence. We can’t help but have beliefs and act on these beliefs. Hauntology simply reminds us that they are not quite as settled or as obvious as we sometimes take them to be. We must still give voice to our convictions, but alongside the voice of our convictions we should hear others’ voices, perhaps even a “still, small voice,” raising questions, doubts, “but what-ifs?” The history of philosophy is largely a history of trying to quiet these doubts and thus overcome the discomfort they cause by proving, once-and-for-all, that “we” are right. With this in mind, the twentieth century Jewish philosopher Emmanuel Levinas says, “The best thing about philosophy is that it fails.” Philosophy, of course, has the reputation of never really getting anywhere. Twenty-five hundred years of asking the same questions and we have yet to come up with any answers that aren’t contentious. Rather than seeing this as an embarrassing defect, Levinas suggests that we see this as philosophy’s virtue. For when we think we have once-and-for-all final answers, when all the ghosts and other mysteries have been banished and we stand in the clear light of pure truth, then we cease conversing with others, we stop really listening to those who continue to disagree with us. Indeed, at that moment we can only regard those who disagree with us as ignorant, irrational, or dishonest. One need look no further than contemporary political discourse to see this dynamic at work. By contrast, the failure of philosophy, the abandonment of claims to definitive, final answers, heralds the recognition that we always need to return again to the work of attempting to articulate our views and listening to the views of others. Hence, the failure of philosophy and the inescapability of hauntology, of being-haunted, need not drive us away from rational inquiry, but instead should drive us into conversation. They allow us to think of “reason” not as a noun, as something I possess and use to prove that I am right, but as a verb, as the honest, open reason-giving that we do with each other. As God says to Isaiah, “Come now, let us reason together.” On this model, reasoned argumentation is about jointly digging deeper into our beliefs and values, rather than digging in our heels. Rational discourse need not be the expression of pompous self-righteousness, but can instead be the practice of vulnerability, trying to express ourselves clearly and honestly so as to open ourselves to the responses of others. Such reasoning may not always reach agreement, but it may allow us to gain a greater understanding and appreciation of others even amidst our disagreements. To my mind, learning to reason in this way is a vital component of a liberal arts education. Being liberally educated is not about memorizing a bunch of information or being able to ace multiple choice exams. It is about learning how to be unsettled, uncertain, and haunted, and then cultivating the critical, creative, and cooperative thinking skills to move forward together. Are any skills more useful in an irreducibly pluralistic society and increasingly interconnected world?

### 2AC---Perms

#### Only the concrete demand of the plan can prevent the alt’s haunting from directionless undecidability

Nail 13 - Post-doctoral Lecturer in European Philosophy at the University of Denver

(Thomas, “Deleuze, Occupy, and the Actuality of Revolution,” Theory & Event, 16.1)

However, the subtraction of the historical actuality of revolution also poses a new danger defined by Alain Badiou in Being and Event (2005): “We can term speculative leftism any thought of being which bases itself upon the theme of an absolute commencement. Speculative leftism imagines that intervention authorizes itself on the basis of itself alone; that it breaks with the situation without any other support than its own negative will” (2005, 210).5 Expanding and applying this concept further, Bruno Bosteels has recently argued that this tendency toward the uncompromising philosophical purification of a potential radical politics without concrete expression can be located in the work of many contemporary European thinkers: Rancière, Žižek, Nancy, Hardt and Negri, Deleuze and Guattari, Roberto Esposito, and even, to some degree, Badiou himself (Bosteels 2011). Insofar as the work of these thinkers tends to privilege the “generic,” “hypothetical” (Badiou), “a-temporal,” “formal” (Žižek), “absolutely deterritorialized” (Hardt, Negri, Deleuze, Guattari) and ultimately non-concrete character of revolutionary events, they are guilty, according to Bosteels, of a “philosophical appropriation of radical emancipatory politics, as if this radicality depended on philosophy in order to be able to subtract itself from the questions of power and the State” (Bosteels 2011, 33).¶ Further, speculative leftism, according to Bosteels, has tended to follow an “ontological turn” based on an “acknowledgment or coming to terms with the inherent gap or ghostly remainder in the discourse of being qua being, whereas a rightist orientation would be one that disavows, represses, or displaces this gap or remainder” (Bosteels 2011, 53). However, as Bosteels quotes Roland Végsö,¶ Because one of the basic insights of deconstruction is that the primary ontological terrain of the constitution of subjectivity is that of radical undecidability, it is impossible to found politics on an ontology. That is, there is no logical move from radical undecidability to a leftist politics. This is why deconstructionist ontology (or hauntology) cannot be inherently leftist. Of course, it can be used for leftist purposes, but that use must be determined on a normative and not on an ontological level.

### 2AC---Duriesmith

**Integration solves best**

**Hudson et al .10** (Valerie M., Prof. of Poli Sci @ Texas A&M, PhD in Poli Sci from Ohio State R. Charli Carpenter, Associate Prof. of Poli Sci @ the University of Massachussetts-Amherst, PhD in Poli Sci from the University of Oregon; Mary Caprioli, Associate Prof. of Poli Sci and Director of the International Studies program @ the University of Minnesota-Duluth, PhD from the University of Connecticut; “Gender and Global Security,” in *The International Studies Encyclopedia*, ed. Robert A. Denemark, 2010)

We acknowledge the important role played by some IR feminists in critiquing/expanding security studies to be more inclusive of women's needs. But it is also true that deploying gender as a variable and a category of analysis has contributed important insights to security studies, which must be taken seriously by security studies scholars not only for feminist reasons, but because security scholars – and policy makers – miss much of what is going on by ignoring gender. **We reject the claim that IR feminist approaches require non-quantitative methods or a critical theoretical epistemology, a claim which has in the past been reified both by IR feminists** (Tickner 2005) and by those writing within the IR mainstream (e.g., Carpenter 2003). **As Mary Caprioli has argued, much quantitative work is also relevant to feminist questions** (Caprioli 2004). We agree with Robert Keohane (1989) that gender as a category of analysis can contribute something to IR as conventionally defined, and it is this contribution which we explore in this essay.¶ In our view, **seeking to integrate gender more fully into the discipline of security studies serves to validate the empirical insights yielded by many feminist IR scholars by taking them seriously within the mainstream**. While methodologies and specification of explanans and explanandum may differ from the work cited above, **such analysis can indeed be consistent with “rethinking security on feminist grounds.” By drawing on empirical insights from gender theory, while speaking to the major concerns of international security studies** as a discipline, the **literature on gender and security can speak to both IR feminists and security studies scholars**. In this essay, we will concentrate on what this literature can say to mainstream security studies, whose primary concerns are, following Walt: “the conditions that make the use of force more likely, the ways that the use of force affects individuals, states and societies, and the specific policies that states adopt in order to prepare for, prevent, or engage in war (1991:212).¶ **Taking a gender perspective need not entail a rejection of conventional concepts, methodologies, or questions that define the discipline.** Unlike the critical feminist scholarship, which is skeptical of conventional methodologies, this literature review includes a range of **empirical scholarship on gender,** whether qualitative or quantitative, positivist or constructivist, that **make a meaningful contribution to security studies**.

### 2AC---Economic Masculinity

#### Economic growth is responsible for drastic improvements in global living standards, and is the only path for future improvements.

Cowen 18, \*Tyler Cowen is a Holbert L. Harris Professor at George Mason University and Director of the Mercatus Center; (October 16th, 2018, “Stubborn Attachments: A vision for a society of free, prosperous, and responsible individuals”, <https://www.goodreads.com/en/book/show/31283667-stubborn-attachments>)

How good is growth, anyway ?

The history of economic growth indicates that, with some qualifications, growth alleviates misery, improves happiness and opportunity, and lengthens lives. Wealthier societies have better living standards, better medicines, and offer greater personal autonomy, greater fulfillment, and more sources of fun. While measured wealth does not exactly correspond to Wealth Plus, these two concepts have come pretty close to one another in the past, especially across the range of outcomes we have observed (as opposed to hypothetical thought experiments and counterfactuals).

We often forget how overwhelmingly positive the effects of economic growth have been. Economist Russ Roberts reports that he frequently polls journalists about how much economic growth there has been since the year 1900. According to Russ, the typical response is that the standard of living has gone up by around fifty percent. In reality, the U.S. standard of living has increased by a factor of five to seven, estimated conservatively, and possibly much more, depending on how we measure prices and the values of outputs over time, a highly inexact science.

The data show just how much living standards have gone up. In 1900, for instance, almost half of all U.S. households (forty-nine percent) had more than one occupant per room and almost one quarter (twenty-three percent) had over 3.5 persons per sleeping room. Slightly less than one quarter (twenty-four percent) of all U.S. households had running water, eighteen percent had refrigerators, and twelve percent had gas or electric lighting. Today, the figures for all of these stand at ninety-nine percent or higher. Back then, only five percent of households had telephones, and none of them had radio or TV. The high school graduation rate was only about six percent, and most jobs were physically arduous and had high rates of disability or even death. In the mid-nineteenth century, a typical worker might have put in somewhere between 2,800 and 3,300 hours of work a year; that estimate is now closer to 1,400 to 2,000 hours a year. 6

Until recently, polio, tuberculosis, and typhoid were common ailments, even among the rich. U.S. presidents George Washington, James Monroe, Andrew Jackson, Abraham Lincoln, Ulysses S. Grant, and James A. Garfield all caught malaria during their lives. Antibiotics and vaccines have existed for only a tiny fraction of human history, and it is no coincidence that they emerged in the wealthiest time period humanity has ever seen. There is also a strong and consistent relationship between wealth and rates of infant mortality; small children do best when they are born into wealthier countries, and that is because wealth supplies the resources to take better care of them.

As recently as the end of the nineteenth century, life expectancy in Western Europe was roughly forty years of age, and food took up fifty to seventy-five percent of a typical family budget. The typical diet in eighteenth-century France had about the same energy value as that of Rwanda in 1965, the most malnourished nation for that year. One effect of this deprivation was that most people simply did not have much energy for life.

In earlier time periods, most individuals performed hard physical labor, and a college or university education—or even a high school education—was a luxury. Leisure time has risen with economic growth. In 1880, about four-fifths of individuals’ discretionary time was spent working, according to economist Robert Fogel. Today we spend about fifty-nine percent of our time doing what we like, and that may rise to seventy-five percent by 2040. 8

The splendors of the modern world are not just frivolous baubles; they are important sources of human comfort and well-being. Imagine that a time traveler from the eighteenth century were to pay a visit to Bill Gates today. He would find televisions, automobiles, refrigerators, central heating, antibiotics, plentiful food, flush toilets, cell phones, personal computers, and affordable air travel, among other remarkable benefits. The most impressive features of Gates’s life, seen from the point of view of a person from the eighteenth century, are those shared by most citizens of wealthy countries today. My smartphone is as good as his. The very existence of an advanced civilization—the product of cumulative economic growth—confers immense benefits to ordinary citizens, including their ability to educate and entertain themselves and choose one life path over another. For further arguments along these lines, I recommend Steven Pinker’s recent book, Enlightenment Now: The Case for Reason, Science, Humanism, and Progress . 9

The economic growth of the wealthier countries benefits the very poor as well, though sometimes with considerable lags. The distribution of wealth changes over time, and not all growth trickles down, but as an overall historical average, the bottom quintile of an economy shares in growth. 10 You can see this by comparing the bottom quintile in, say, the United States to the bottom quintile in India or Mexico.

The richer economy can also do more to elevate the living standards of immigrants. Poor people who move to rich countries usually receive higher incomes and have better living conditions, and their children do better still. The richer the receiving country, the more new immigrants tend to benefit. Central American immigrants to the United States do better than Central American immigrants to Mexico or Nepalese immigrants to India. Immigrants also send remittances back home at a rate that far exceeds governmental foreign aid. Actual upward mobility in the United States far exceeds what the usual numbers indicate, because published statistics on upward mobility do not typically include a comparison with pre-immigration outcomes.

But the chain of benefits does not stop there. Migrants will often return to their home countries, bringing new skills and new business connections. Both India and Israel have developed vibrant technology and software scenes precisely because of their close ties with the start-up scene of the United States. English-language universities in English-speaking countries have trained many thousands of Asian students in science and engineering, again leading to new businesses and, eventually, higher economic growth in their home countries.

New medicines and technologies developed in wealthy nations also make their way to the rest of the world, as illustrated most conspicuously by the rapid spread of the cell phone and now the smartphone. One study predicts that if the leading twenty-one industrial countries were to boost their R&D by half a percentage point of GDP, U.S. output alone would grow by fifteen percent. But it doesn’t end there: output in Canada and Italy would grow by about twenty-five percent, and the output of all industrial nations would increase by 17.5 percent, on average. In the less economically developed countries, output would increase by about 10.6 percent on average. 11

Although these historical processes have often embodied unfairness and long lags of decades or more, economic growth has nonetheless brought wealth to the poor and elevated their status. The Greek city-states and the Roman Empire benefited from maritime trade across the Mediterranean; those regions in turn spread growth-enhancing institutions around Europe, Northern Africa, and the Middle East. The commercial revolution of the late Middle Ages and Renaissance reopened many of the trade routes of antiquity, and eventually human beings started to climb out of the Malthusian trap of very low per capita incomes at subsistence. The wealth of the West helped to enable the export miracles of the East Asian economies. Today, most poor countries seek greater access to wealthier Western and Asian markets, and flourish if they can achieve it. 12

For all the recent increases in inequality within individual nations, global inequality has declined over the last few decades, in large part because of growth in China and India. And the growth in these emerging nations was largely driven by earlier growth in the West and in East Asia. China, for instance, engaged in “catch-up” growth by adopting Western technologies and exporting to the wealthier nations. China has gone from being a quite poor nation to a “middle-income” nation with a sizable middle and upper class.

Although recent media coverage has focused almost exclusively on within-nation magnitudes, recent world history has been an extraordinarily egalitarian time. It is above all else a story about how global economic growth helps the poor. There has been a squeezing of the middle class in the wealthier nations, in part because of increasing global competition. Still, we have seen economic growth, aggregate wealth, and global income equality all rising together over the last twenty-five years. Many citizens in East Asia, South Asia, and Latin America have seen significant gains in their standard of living, and much of this has been a trickle-down effect from the earlier growth of the wealthier countries. Much of Africa is now following suit, bolstered in part by China’s demand for raw materials, and also by the spread of modern technologies such as affordable cell phones. 13

Sometimes extended periods of growth do not confer full or fair benefits to the poor or lower classes, for instance during the early phase of the British Industrial Revolution in the late eighteenth century. Still, the historical record suggests that it was better for Britain to push ahead with economic growth, as this eventually drove the greatest boost in living standards the world has ever seen. To be sure, there were probably better policies which, had they been adopted, would have distributed the benefits of growth more widely (e.g., fewer wars and Poor Law reform and free trade for the British). But even taking misguided policies into account, Britain fared better by pursuing economic growth rather than turning its back on the idea, even though significant real wage gains for the working class often did not arrive until the 1840s.

Nobel Laureate Amartya Sen has promoted the idea of “capabilities” as, if not quite a substitute for economic growth, then an alternative focus. Sen points out that our positive opportunities in life often matter more than the amount of cash in our bank accounts. He also notes that some parts of the world, such as the state of Kerala in India, have relatively good health and education indicators, even though their per capita incomes are relatively low.

Sen’s points are well taken, but they do not put a fundamental dent in the relevance of wealth, or, as I am calling it here, Wealth Plus. The significant benefits accrued from capabilities, such as health benefits, are accounted for in Wealth Plus, even if they are not properly represented in current GDP measures. In other words, Kerala is wealthier than some limited statistical measures imply. Wealth and good social outcomes are still strongly correlated on average, and this correlation is stronger over longer time horizons. For instance, if Kerala does not grow much in more narrow economic terms, it is unlikely to look so impressive in its social indicators fifty or one hundred years from now. Even today, Kerala manages as well as it does in large part because so many Keralans take jobs in wealthier countries, especially in the Gulf States, and send money back home. And compared to other Indian states, Kerala has an above-average measure of wealth, as well as above-average consumption expenditures, both of which are accounted for in traditional statistics. 14

The truth is that economic growth is the only permanent path out of squalor. Economic growth is how the Western world climbed out of the poverty of the year 1000 A.D. or 5000 B.C. It is how much of East Asia became remarkably prosperous. And it is how our living standards will improve in the future. Just as the present appears remarkable from the vantage point of the past, the future, at least provided growth continues, will offer comparable advances, including, perhaps, greater life expectancies, cures for debilitating diseases, and cognitive enhancements. Billions of people will have much better and longer lives. Many features of modern life might someday seem as backward as we now regard the large number of women in earlier centuries who died in childbirth for lack of proper care.

### 2AC Alt Fails

#### Hauntology attaches to nostalgia---alt fails

Bridle 11 - British writer, artist, publisher and technologist currently based in Athens, Greece. His work covers the intersection of literature, culture and the network. His work has been shown in solo shows in the UK, US, and Germany, in group shows worldwide, and commissioned by organisations including the Victoria & Albert Museum, The Southbank Centre, the Photographer’s Gallery, Artangel, the Istanbul Design Biennial, the Oslo Architecture Triennale and Guimaraes 2012 European City of Culture (Full list of exhibitions). He received an Honorary Mention at the Prix Ars Electronica 2013, and in 2014 he was awarded the Excellence Award at the Japan Media Arts Festival, the Graphics Award at the Design Museum Designs of the Year, and shortlisted for the Future Generation Art Prize. He has been a resident at Lighthouse (Brighton), the White Building (London) and Eyebeam (New York), and an adjunct professor on the Interactive Telecommunications Programme at New York University. In 2011, he coined the term “New Aesthetic”, and his ongoing research around this subject has been featured and discussed worldwide.

(James, “Hauntological futures,” http://booktwo.org/notebook/hauntological-futures/)

Hauntology is also a network effect engendered by the increasing apparent\* flattening of history and time. The network, fragmented and unevenly distributed, induces a growing sense that alternative worlds are very close indeed. ( \* The internet only appears to be flat, as we perceive it in two dimensions. In fact, the knowledge it embodies, because it is tied to and instantiated in time, is ever receding from us, darkening and thickening and coming apart, becoming harder to reach and harder to find. The past is intractable but loosened, suffering our gaze upon it and our endless reinterpretations of it.) As such, it is amenable to the same critical apparatus as Network Realism: indeed, it may be a part of the same thing. “Ghost Box and, in particular, Belbury Poly are not inspired by the hackneyed futurism that pulsed through earlier electronic music. Their interest lies in lost worlds and an England imagined as Arcadia, in tracks such as Pan’s Garden, which sounds, thrillingly, like morris-dance music made with synths.” – The Times (“Hackneyed futurism” is key here: the future we were promised, of living in space, of jetpacks and pellet foods, is simply not going to happen. And while we reject the macho dark survivalist future of envirotechnological collapse, we also must give up the NASA-Concorde extopia we have been pining for forever: these are the futures of an extinguished past, a worldline that didn’t work out, a dead end.) While I understand the distinction between nostalgia and hauntology, I am unconvinced by their separation in the application of the latter to music. The two most frequently cited sonic hauntologists are Burial and Ghost Box records, and while I’m a huge fan of both, I also see them as being steeped in nostalgia. I am so bored of nostalgia. Of letterpress and braces and elaborate facial hair. I appreciate these things, but I think there’s something wrong with a culture that fetishises them to the extent that we currently do. As if authenticity is only to be found in the past. I think we are frightened and I think we are distrustful and we are worried that things are slipping away. (This is something I am going to address separately.) What would a hauntological literature look like? I’m not sure, and that makes me suspicious. The two things that come to mind are Borges (surprise!) and starpunk, which I’m also going to write about separately. Much hauntology fails because it continues to assert a backwards/forwards model of time, a resurrection of an imagined past which is still too drenched in pure nostalgia to serve any revolutionary purpose. Hauntology feels like a symptom of future shock, a reaction. Caisson disease: a form of the bends brought on by too rapid changes of pressure when moving between the different levels (pressurised chambers) of the caissons used in building bridges. A symptom of the unevenly-distributed future, the isobars of our ever-shifting and expanding culture. Another test of hauntology is how it stands up to other reactions to present conditions. Bill Drummond’s The17 project is an attempt to reimagine music, its genesis in a rejection of the past. (The book.) He imposes a restriction: “only listen to music written, recorded or released in the previous twelve months by composers, soloists or ensembles who have never released music in any format at any time previous to the last twelve months.” But, Bill is disappointed: “everything I bought sounded like something I had heard 10, 20, 30 years before.” Out of this, and a number of other realisations, comes The17. This is the opposite of hauntology: to demand the radically new. Hauntology reinvigorates, reanimates the past—allegedly—turning the old musics to new purpose, much as Borge’s Pierre Menard does to the Quixote. I think my problem with hauntology is that it deals with the problem of the future by going back to the past. And that is fine: but it will not save us.

### 2AC AT: Tanyag (impact)

#### insert referenced portions in yellow

Tanyag ’20---Maria Tanyag, Research Fellow/Lecturer in the Department of International Relations. She was awarded her PhD in Politics and International Relations from Monash University in 2018. [“A Feminist Call to Be Radical: Linking Women's Health and Planetary Health,” *Cambridge University Press: Politics and Gender,* 7/28/2020, <https://www-cambridge-org.proxy.lib.umich.edu/core/journals/politics-and-gender/article/feminist-call-to-be-radical-linking-womens-health-and-planetary-health/007A5B42E1A3A907C69ACC46A601EDEF>] KS

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—Teresia Teaiwa (2013)

Reflecting on the two previous conversations in Politics & Gender (2015 and 2017) regarding the diverging paths in global political economy and security studies that feminist international relations (IR) scholars have taken, I am reminded of Teresia Teaiwa's poetry, which for me speaks about how crisis gives birth to the radical starting points of our feminist inquiries. We are all undoubtedly on the cusp of ever-intensifying forms of insecurities, and peoples who have least contributed to their creation and hastening are bearing the worst impacts. It is projected that by 2100, the compounded threats that humanity will face as a result of climate change will be in multitudes across five main human systems: health, water, food, economy, infrastructure, and security (Cramer et al. 2018; Mora et al. 2018, 106). The complex consequences of climate change demand an approach that encompasses the interaction effects of different risks and hazards. However, across natural and social sciences so far, the norm has been to focus on specific aspects of human life and to examine hazards–including conflict and violence—in isolation from one another. We then run the risk of misleading ourselves with partial, if not incorrect, assessments of the global processes surrounding climate change. In particular, we are yet to understand the multiscalar dynamics of environmental degradation and extreme weather as they are entangled with other crises such as armed conflicts, health pandemics, economic recessions, and resurgences of authoritarian leadership. Whether feminist or not, we simply cannot afford to think in “camps” instead of “bridges” given the nature of the multiple crises we as humanity are facing. As Anna M. Aganthangelou (2017, 741) points out, “[g]lobal politics are never just ‘economic’ or ‘security’ issues,” so the kind of assumptions we hold and how these inform the questions we raise need to “attend to the highest stake of politics: existence.”

Feminist IR scholarship can contribute to and even take the lead in advancing a transformative and interdisciplinary analysis of climate change and interlinked crises by starting from the everyday lives of women on the margins of global politics (Tickner 2015; see also Harding 1991; hooks 2000). The radical and transformative contribution of feminist perspectives to understanding global peace and security is that it allows for the unraveling of systems of oppression through the empirical analysis of how they entangle and make lives insecure. Then and now, what makes feminist scholarship particularly relevant to IR as a discipline and beyond, and for global security and development policy-making are that (1) it generates critiques based on system-level analysis that begins with the particularized lives of women from/in/through the margins, and that ultimately, (2) it aims to formulate radical visions for change focused not simply on building back in the aftermath of crisis but rather about flourishing—in leaps and bounds.

### 2AC---Realism

#### Realism is inevitable

de Araujo, professor for Ethics at Universidade do Estado do Rio de Janeiro, 14

(Marcelo, “Moral Enhancement and Political Realism,” Journal of Evolution and Technology 24(2): 29-43)

Some moral enhancement theorists argue that a society of morally enhanced individuals would be in a better position to cope with important problems that humankind is likely to face in the future such as, for instance, the threats posed by climate change, grand scale terrorist attacks, or the risk of catastrophic wars. The assumption here is quite simple: our inability to cope successfully with these problems stems mainly from a sort of deficit in human beings’ moral motivation. If human beings were morally better – if we had enhanced moral dispositions – there would be fewer wars, less terrorism, and more willingness to save our environment. Although simple and attractive, this assumption is, as I intend to show, false. At the root of threats to the survival of humankind in the future is not a deficit in our moral dispositions, but the endurance of an old political arrangement that prevents the pursuit of shared goals on a collective basis. The political arrangement I have in mind here is the international system of states. In my analysis of the political implications of moral enhancement, I intend to concentrate my attention only on the supposition that we could avoid major wars in the future by making individuals morally better. I do not intend to discuss the threats posed by climate change, or by terrorism, although some human enhancement theorists also seek to cover these topics. I will explain, in the course of my analysis, a conceptual distinction between “human nature realism” and “structural realism,” well-known in the field of international relations theory. Thomas Douglas seems to have been among the first to explore the idea of “moral enhancement” as a new form of human enhancement. He certainly helped to kick off the current phase of the debate. In a paper published in 2008, Douglas suggests that in the “future people might use biomedical technology to morally enhance themselves.” Douglas characterizes moral enhancement in terms of the acquisition of “morally better motives” (Douglas 2008, 229). Mark Walker, in a paper published in 2009, suggests a similar idea. He characterizes moral enhancement in terms of improved moral dispositions or “genetic virtues”: The Genetic Virtue Program (GVP) is a proposal for influencing our moral nature through biology, that is, it is an alternate yet complementary means by which ethics and ethicists might contribute to the task of making our lives and world a better place. The basic idea is simple enough: genes influence human behavior, so altering the genes of individuals may alter the influence genes exert on behavior. (Walker 2009, 27–28) Walker does not argue in favor of any specific moral theory, such as, for instance, virtue ethics. Whether one endorses a deontological or a utilitarian approach to ethics, he argues, the concept of virtue is relevant to the extent that virtues motivate us either to do the right thing or to maximize the good (Walker 2009, 35). Moral enhancement theory, however, does not reduce the ethical debate to the problem of moral dispositions. Morality also concerns, to a large extent, questions about reasons for action. And moral enhancement, most certainly, will not improve our moral beliefs; neither could it be used to settle moral disagreements. This seems to have led some authors to criticize the moral enhancement idea on the ground that it neglects the cognitive side of our moral behavior. Robert Sparrow, for instance, argues that, from a Kantian point of view, moral enhancement would have to provide us with better moral beliefs rather than enhanced moral motivation (Sparrow 2014, 25; see also Agar 2010, 74). Yet, it seems to me that this objection misses the point of the moral enhancement idea. Many people, across different countries, already share moral beliefs relating, for instance, to the wrongness of harming or killing other people arbitrarily, or to the moral requirement to help people in need. They may share moral beliefs while not sharing the same reasons for these beliefs, or perhaps even not being able to articulate the beliefs in the conceptual framework of a moral theory (Blackford 2010, 83). But although they share some moral beliefs, in some circumstances they may lack the appropriate motivation to act accordingly. Moral enhancement, thus, aims at improving moral motivation, and leaves open the question as to how to improve our moral judgments. In a recent paper, published in The Journal of Medical Ethics, neuroscientist Molly Crockett reports the state of the art in the still very embryonic field of moral enhancement. She points out, for example, that the selective serotonin reuptake inhibitor (SSRI) citalopram seems to increase harm aversion. There is, moreover, some evidence that this substance may be effective in the treatment of specific types of aggressive behavior. Like Douglas, Crockett emphasizes that moral enhancement should aim at individuals’ moral motives (Crockett 2014; see also Spence 2008; Terbeck et al. 2013). Another substance that is frequently mentioned in the moral enhancement literature is oxytocin. Some studies suggest that willingness to cooperate with other people,and to trust unknown prospective cooperators, may be enhanced by an increase in the levels of oxytocin in the organism (Zak 2008, 2011; Zak and Kugler 2011; Persson and Savulescu 2012, 118–119). Oxytocin has also been reported to be “associated with the subjective experience of empathy” (Zak 2011, 55; Zak and Kugler 2011, 144). The question I would like to examine now concerns the supposition that moral enhancement – comprehended in these terms and assuming for the sake of argument that, some day, it might become effective and safe – may also help us in coping with the threat of devastating wars in the future. The assumption that there is a relationship between, on the one hand, threats to the survival of humankind and, on the other, a sort of “deficit” in our moral dispositions is clearly made by some moral enhancements theorists. Douglas, for instance, argues that “according to many plausible theories, some of the world’s most important problems — such as developing world poverty, climate change and war — can be attributed to these moral deficits” (2008, 230). Walker, in a similar vein, writes about the possibility of “using biotechnology to alter our biological natures in an effort to reduce evil in the world” (2009, 29). And Julian Savulescu and Ingmar Persson go as far as to defend the “the need for moral enhancement” of humankind in a series of articles, and in a book published in 2012. One of the reasons Savulescu and Persson advance for the moral enhancement of humankind is that our moral dispositions seem to have remained basically unchanged over the last millennia (Persson and Savulescu 2012, 2). These dispositions have proved thus far quite useful for the survival of human beings as a species. They have enabled us to cooperate with each other in the collective production of things such as food, shelter, tools, and farming. They have also played a crucial role in the creation and refinement of a variety of human institutions such as settlements, villages, and laws. Although the possibility of free-riding has never been fully eradicated, the benefits provided by cooperation have largely exceeded the disadvantages of our having to deal with occasional uncooperative or untrustworthy individuals (Persson and Savulescu 2012, 39). The problem, however, is that the same dispositions that have enabled human beings in the past to engage in the collective production of so many artifacts and institutions now seem powerless in the face of the human capacity to destroy other human beings on a grand scale, or perhaps even to annihilate the entire human species. There is, according to Savulescu and Persson, a “mismatch” between our cognitive faculties and our evolved moral attitudes: “[…] as we have repeatedly stressed, owing to the progress of science, the range of our powers of action has widely outgrown the range of our spontaneous moral attitudes, and created a dangerous mismatch” (Persson and Savulescu 2012, 103; see also Persson and Savulescu 2010, 660; Persson and Savulescu 2011b; DeGrazie 2012, 2; Rakić 2014, 2). This worry about the mismatch between, on the one hand, the modern technological capacity to destroy and, on the other, our limited moral commitments is not new. The political philosopher Hans Morgenthau, best known for his defense of political realism, called attention to the same problem nearly fifty years ago. In the wake of the first successful tests with thermonuclear bombs, conducted by the USA and the former Soviet Union, Morgenthau referred to the “contrast” between the technological progress of our age and our feeble moral attitudes as one of the most disturbing dilemmas of our time: The first dilemma consists in the contrast between the technological unification of the world and the parochial moral commitments and political institutions of the age. Moral commitments and political institutions, dating from an age which modern technology has left behind, have not kept pace with technological achievements and, hence, are incapable of controlling their destructive potentialities. (Morgenthau 1962, 174) Moral enhancement theorists and political realists like Morgenthau, therefore, share the thesis that our natural moral dispositions are not strong enough to prevent human beings from endangering their own existence as a species. But they differ as to the best way out of this quandary: moral enhancement theorists argue for the re-engineering of our moral dispositions, whereas Morgenthau accepted the immutability of human nature and argued, instead, for the re-engineering of world politics. Both positions, as I intend to show, are wrong in assuming that the “dilemma” results from the weakness of our spontaneous moral dispositions in the face of the unprecedented technological achievements of our time. On the other hand, both positions are correct in recognizing the real possibility of global catastrophes resulting from the malevolent use of, for instance, biotechnology or nuclear capabilities. The supposition that individuals’ unwillingness to cooperate with each other, even when they would be better-off by choosing to cooperate, results from a sort of deficit of dispositions such as altruism, empathy, and benevolence has been at the core of some important political theories. This idea is an important assumption in the works of early modern political realists such as Machiavelli and Thomas Hobbes. It was also later endorsed by some well-known authors writing about the origins of war in the first half of the twentieth century. It was then believed, as Sigmund Freud suggested in a text from 1932, that the main cause of wars is a human tendency to “hatred and destruction” (in German: ein Trieb zum Hassen und Vernichtung). Freud went as far as to suggest that human beings have an ingrained “inclination” to “aggression” and “destruction” (Aggressionstrieb, Aggressionsneigung, and Destruktionstrieb), and that this inclination has a “good biological basis” (biologisch wohl begründet) (Freud 1999, 20–24; see also Freud 1950; Forbes 1984; Pick 1993, 211–227; Medoff 2009). The attempt to employ Freud’s conception of human nature in understanding international relations has recently been resumed, for instance by Kurt Jacobsen in a paper entitled “Why Freud Matters: Psychoanalysis and International Relations Revisited,” published in 2013. Morgenthau himself was deeply influenced by Freud’s speculations on the origins of war.1 Early in the 1930s, Morgenthau wrote an essay called “On the Origin of the Political from the Nature of Human Beings” (Über die Herkunft des Politischen aus dem Wesen des Menschen), which contains several references to Freud’s theory about the human propensity to aggression.2 Morgenthau’s most influential book, Politics among Nations: The Struggle for Power and Peace, first published in 1948 and then successively revised and edited, is still considered a landmark work in the tradition of political realism. According to Morgenthau, politics is governed by laws that have their origin in human nature: “Political realism believes that politics, like society in general, is governed by objective laws that have their roots in human nature” (Morgenthau 2006, 4). Just like human enhancement theorists, Morgenthau also takes for granted that human nature has not changed over recent millennia: “Human nature, in which the laws of politics have their roots, has not changed since the classical philosophies of China, India, and Greece endeavored to discover these laws” (Morgenthau 2006, 4). And since, for Morgenthau, human nature prompts human beings to act selfishly, rather than cooperatively, political leaders will sometimes favor conflict over cooperation, unless some superior power compels them to act otherwise. Now, this is exactly what happens in the domain of international relations. For in the international sphere there is not a supranational institution with the real power to prevent states from pursuing means of self-defense. The acquisition of means of self-defense, however, is frequently perceived by other states as a threat to their own security. This leads to the security dilemma and the possibility of war. As Morgenthau put the problem in an article published in 1967: “The actions of states are determined not by moral principles and legal commitments but by considerations of interest and power” (1967, 3). Because Morgenthau and early modern political philosophers such as Machiavelli and Hobbes defended political realism on the grounds provided by a specific conception human nature, their version of political realism has been frequently called “human nature realism.” The literature on human nature realism has become quite extensive (Speer 1968; Booth 1991; Freyberg-Inan 2003; Kaufman 2006; Molloy 2006, 82–85; Craig 2007; Scheuerman 2007, 2010, 2012; Schuett 2007; Neascu 2009; Behr 2010, 210–225; Brown 2011; Jütersonke 2012). It is not my intention here to present a fully-fledged account of the tradition of human nature realism, but rather to emphasize the extent to which some moral enhancement theorists, in their description of some of the gloomy scenarios humankind is likely to face in the future, implicitly endorse this kind of political realism. Indeed, like human nature realists, moral enhancement theorists assume that human nature has not changed over the last millennia, and that violence and lack of cooperation in the international sphere result chiefly from human nature’s limited inclination to pursue morally desirable goals. One may, of course, criticize the human enhancement project by rejecting the assumption that conflict and violence in the international domain should be explained by means of a theory about human nature. In a reply to Savulescu and Persson, Sparrow correctly argues that “structural issues,” rather than human nature, constitute the main factor underlying political conflicts (Sparrow 2014, 29). But he does not explain what exactly these “structural issues” are, as I intend to do later. Sparrow is right in rejecting the human nature theory underlying the human enhancement project. But this underlying assumption, in my view, is not trivially false or simply “ludicrous,” as he suggests. Human nature realism has been implicitly or explicitly endorsed by leading political philosophers ever since Thucydides speculated on the origins of war in antiquity (Freyberg-Inan 2003, 23–36). True, it might be objected that “human nature realism,” as it was defended by Morgenthau and earlier political philosophers, relied upon a metaphysical or psychoanalytical conception of human nature, a conception that, actually, did not have the support of any serious scientific investigation (Smith 1983, 167). Yet, over the last few years there has been much empirical research in fields such as developmental psychology and evolutionary biology that apparently gives some support to the realist claim. Some of these studies suggest that an inclination to aggression and conflict has its origins in our evolutionary history. This idea, then, has recently led some authors to resume “human nature realism” on new foundations, devoid of the metaphysical assumptions of the early realists, and entirely grounded in empirical research. Indeed, some recent works in the field of international relations theory already seek to call attention to evolutionary biology as a possible new start for political realism. This point is clearly made, for instance, by Bradley Thayer, who published in 2004 a book called Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict. And in a paper published in 2000, he affirms the following: Evolutionary theory provides a stronger foundation for realism because it is based on science, not on theology or metaphysics. I use the theory to explain two human traits: egoism and domination. I submit that the egoistic and dominating behavior of individuals, which is commonly described as “realist,” is a product of the evolutionary process. I focus on these two traits because they are critical components of any realist argument in explaining international politics. (Thayer 2000, 125; see also Thayer 2004) Thayer basically argues that a tendency to egoism and domination stems from human evolutionary history. The predominance of conflict and competition in the domain of international politics, he argues, is a reflex of dispositions that can now be proved to be part of our evolved human nature in a way that Morgenthau and other earlier political philosophers could not have established in their own time. Now, what some moral enhancement theorists propose is a direct intervention in our “evolved limited moral psychology” as a means to make us “fit” to cope with some possible devastating consequences from the predominance of conflict and competition in the domain of international politics (Persson and Savulescu 2010, 664). Moral enhancement theorists comprehend the nature of war and conflicts, especially those conflicts that humankind is likely to face in the future, as the result of human beings’ limited moral motivations. Compared to supporters of human nature realism, however, moral enhancement theorists are less skeptical about the prospect of our taming human beings’ proclivity to do evil. For our knowledge in fields such as neurology and pharmacology does already enable us to enhance people’s performance in a variety of activities, and there seems to be no reason to assume it will not enable us to enhance people morally in the future. But the question, of course, is whether moral enhancement will also improve the prospect of our coping successfully with some major threats to the survival of humankind, as Savulescu and Persson propose, or to reduce evil in the world, as proposed by Walker. V. The point to which I would next like to call attention is that “human nature realism” – which is implicitly presupposed by some moral enhancement theorists – has been much criticized over the last decades within the tradition of political realism itself. “Structural realism,” unlike “human nature realism,” does not seek to derive a theory about conflicts and violence in the context of international relations from a theory of the moral shortcomings of human nature. Structural realism was originally proposed by Kenneth Waltz in Man, the State and War, published in 1959, and then later in another book called Theory of International Politics, published in 1979. In both works, Waltz seeks to avoid committing himself to any specific conception of human nature (Waltz 2001, x–xi). Waltz’s thesis is that the thrust of the political realism doctrine can be retained without our having to commit ourselves to any theory about the shortcomings of human nature. What is relevant for our understanding of international politics is, instead, our understanding of the “structure” of the international system of states (Waltz 1986). John Mearsheimer, too, is an important contemporary advocate of political realism. Although he seeks to distance himself from some ideas defended by Waltz, he also rejects human nature realism and, like Waltz, refers to himself as a supporter of “structural realism” (Mearsheimer 2001, 20). One of the basic tenets of political realism (whether “human nature realism” or “structural realism”) is, first, that the states are the main, if not the only, relevant actors in the context of international relations; and second, that states compete for power in the international arena. Moral considerations in international affairs, according to realists, are secondary when set against the state’s primary goal, namely its own security and survival. But while human nature realists such as Morgenthau explain the struggle for power as a result of human beings’ natural inclinations, structural realists like Waltz and Mearsheimer argue that conflicts in the international arena do not stem from human nature, but from the very “structure” of the international system of states (Mearsheimer 2001, 18). According to Waltz and Mearsheimer, it is this structure that compels individuals to act as they do in the domain of international affairs. And one distinguishing feature of the international system of states is its “anarchical structure,” i.e. the lack of a central government analogous to the central governments that exist in the context of domestic politics. It means that each individual state is responsible for its own integrity and survival. In the absence of a superior authority, over and above the power of each sovereign state, political leaders often feel compelled to favor security over morality

, even if, all other things being considered, they would naturally be more inclined to trust and to cooperate with political leaders of other states. On the other hand, when political leaders do trust and cooperate with other states, it is not necessarily their benevolent nature that motivates them to be cooperative and trustworthy, but, again, it is the structure of the system of states that compels them. The concept of human nature, as we can see, does not play a decisive role here. Because Waltz and Mearsheimer depart from “human nature realism,” their version of political realism has also sometimes been called “neo-realism” (Booth 1991, 533). Thus, even if human beings turn out to become morally enhanced in the future, humankind may still have to face the same scary scenarios described by some moral enhancement theorists. This is likely to happen if, indeed, human beings remain compelled to cooperate within the present structure of the system of states. Consider, for instance, the incident with a Norwegian weather rocket in January 1995. Russian radars detected a missile that was initially suspected of being on its way to reach Moscow in five minutes. All levels of Russian military defense were immediately put on alert for a possible imminent attack and massive retaliation. It is reported that for the first time in history a Russian president had before him, ready to be used, the “nuclear briefcase” from which the permission to launch nuclear weapons is issued. And that happened when the Cold War was already supposed to be over! In the event, it was realized that the rocket was leaving Russian territory and Boris Yeltsin did not have to enter the history books as the man who started the third world war by mistake (Cirincione 2008, 382).3 But under the crushing pressure of having to decide in such a short time, and on the basis of unreliable information, whether or not to retaliate, even a morally enhanced Yeltsin might have given orders to launch a devastating nuclear response – and that in spite of strong moral dispositions to the contrary. Writing for The Guardian on the basis of recently declassified documents, Rupert Myers reports further incidents similar to the one of 1995. He suggests that as more states strive to acquire nuclear capability, the danger of a major nuclear accident is likely to increase (Myers 2014). What has to be changed, therefore, is not human moral dispositions, but the very structure of the political international system of states within which we currently live. As far as major threats to the survival of humankind are concerned, moral enhancement might play an important role in the future only to the extent that it will help humankind to change the structure of the system of states. While moral enhancement may possibly have desirable results in some areas of human cooperation that do not badly threaten our security – such as donating food, medicine, and money to poorer countries – it will not motivate political leaders to dismantle their nuclear weapons. Neither will it deter other political leaders from pursuing nuclear capability, at any rate not as long as the structure of international politics compels them to see prospective cooperators in the present as possible enemies in the future. The idea of a “structure” should not be understood here in metaphysical terms, as though it mysteriously existed in a transcendent world and had the magical power of determining leaders’ decisions in this world. The word “structure” denotes merely a political arrangement in which there are no powerful law-enforcing institutions. And in the absence of the kind of security that law-enforcing institutions have the force to create, political leaders will often fail to cooperate, and occasionally engage in conflicts and wars, in those areas that are critical to their security and survival. Given the structure of international politics and the basic goal of survival, this is likely to continue to happen, even if, in the future, political leaders become less egoistic and power-seeking through moral enhancement. On the other hand, since the structure of the international system of states is itself another human institution, there is no reason to suppose that it cannot ever be changed. If people become morally enhanced in the future they may possibly feel more strongly motivated to change the structure of the system of states, or perhaps even feel inclined to abolish it altogether. In my view, however, addressing major threats to the survival of humankind in the future by means of bioengineering is unlikely to yield the expected results, so long as moral enhancement is pursued within the present framework of the international system of states.

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### DA—Court Clog

#### Rojas and Kemp extremely speculative.

1NR Rojas & Kemp ’20 [KU = blue] [Clarissa Rios Rojas: Research Associate, Centre for the Study of Existential Risk, University of Cambridge; Luke Kemp: Lecturer in International Relations and Environmental Policy, Australian National University; 12/21/2020; “3 scenarios for how bioengineering could change our world in 10 years,” https://www.weforum.org/agenda/2020/12/3-scenarios-for-how-bioengineering-could-change-our-world-in-10-years//BUBU]

Future potential scenario #1: **within 5 years**

**Biotech**nological discoveries are **increasingly facilitated** by automated and roboticised, private 'cloud labs'. Some of these labs construct drought-tolerant **genetically** modified **plants** that are bred for a warmer world. However, the **effects** on **biodiversity** and **ecosystems** have not been fully studied, therefore, there is uncertainty about how to deploy them.

These concerns catch the attention of **billionaires** who start **donating** to **science**. This causes a new influx of **funding** for new **scientific projects,** among them: protein **engineering** and machine **learning**, leading to the **creation of** novel compounds within the **industry** (e.g. new catalysts for un-natural reactions) and **medical** applications (e.g. selectively destroying damaged tissue which is key for some diseases). In parallel, the Organization for the Prohibition of Chemical Weapons starts including new substances on their list after identifying that some of these newly created proteins have the potential to be used as weapons due to their high lethality.

Future potential scenario #2: within 10 years

**Biomedical** research has been **enhanced**, and now cell therapies are helping **patients** with rare **diseases**, neuronal probes are **curing disabilities**, citizens are **vaccinated** by consuming edible vaccines in plants and Phage therapy is used as an alternative to antibiotic treatment, tackling **antimicrobial** **resistance** that has been **identified** as a potential **global catastrophic risk.**

**Healthcare** is facing a **tug of war** between democratization and elite therapies. The Open-Pharma movement has spread and the monopoly of Big Pharma is being undermined by small lab producers of drugs such as insulin.

Other **advances** are equally **promising** but run ethical issues in both human enhancement and exacerbating health inequities. In a world of mounting inequalities, the question of who benefits and misses out from bioengineering advances looms large. In parallel, some governments collected genomic data of all citizens in compulsory programs. Unfortunately, some of these genomic databases were hacked and the genomic data of millions of citizens was sold through “black markets” and blockchain. Some companies start using this data as part of their hiring decisions.

Future potential scenario #3: **beyond 10 years**

The increasing impacts of **climate change** has focused **bioengineering** on the **sustainability challenge**. Plastic and many energy or material **intensive** **products** are being **phased out** in favor of **bio-based materials** made from renewable plant feedstock.

This is driven by both a new fashion taste for bio-clothing, **higher carbon** **prices** and the **introduction of nitrogen** **pricing** in 34 countries.