# Off

## Litigation

#### Litigation is controlled now---the aff kills it

Emily S. Taylor Poppe 21, Assistant Professor of Law at the University of California, Irvine School of Law, “Institutional Design for Access to Justice”, UC Irvine Law Review, 11 U.C. Irvine L. Rev. 781, February 2021, Lexis

This law-centric orientation is strikingly different from that of most Americans, despite popular claims about their litigiousness. Most individuals never even identify the civil legal problems they experience as "legal." Only a tiny minority will ever seek legal advice in response to a problem, and most are more likely to do nothing than to file a lawsuit. Decades of empirical scholarship have confirmed that despite the prevalence of civil legal problems in everyday life, there is remarkably little recourse to formal law. [FOOTNOTE BEGINS] DAVID M. ENGEL, THE MYTH OF THE LITIGIOUS SOCIETY: WHY WE DON'T SUE 3 (2016) (noting that "specious claims of a litigation explosion have been made so often that they have rooted themselves in the national psyche"). [FOOTNOTE ENDS]

#### Antitrust litigation is uniquely complex and resource-intensive---a spike trades-off with judicial functioning in other areas

Daniel R. Warren 15, JD from the Boston University School of Law, BS from Ohio State University, “Stress Fractures: The Need to Stop and Repair the Growing Divide in Circuit Court Application of Summary Judgment in Antitrust Litigation”, Review of Banking and Financial Law, 35 Rev. Banking & Fin. L. 380, Lexis

A. Summary Judgment Can Cut Short Extreme Costs Antitrust litigation can involve enormous discovery costs, particularly when antitrust litigation overlaps with class action litigation. Due to the wide scope of many antitrust claims, discovery can implicate a broad range of documents, records, interrogatories, and depositions. In fact, "[s]trategically minded" plaintiffs can take advantage of antitrust law's "onerous discovery costs" by requiring the defendant "to respond to wide-ranging interrogatories, produce documents, and prepare for and defend depositions" with only a "facially plausible allegation" of an antitrust violation. These costs can take a very large toll on both large and small businesses. The legal hours necessary to answer and address discovery challenges can also impose extreme costs. Plaintiffs can often use discovery costs as a weapon against defendants in antitrust litigation. The Seventh Circuit Court of Appeals stated that "antitrust trials often encompass a great deal of expensive and time consuming discovery and trial work" in explaining that the "very nature" of antitrust litigation should encourage summary judgment. The court's language here supports [\*389] the idea that in antitrust litigation, summary judgment has a special value, greater even than its normal use in other areas of the law. Summary judgment can be used to cut short lengthy litigation where parties have already accrued extreme costs from discovery and one party still cannot produce a genuine issue of material fact. In antitrust litigation, the value of summary judgment to mitigate discovery costs through shortening litigation is elevated to a special importance even greater than normal for three reasons. First, antitrust litigation normally involves large organizations, which magnifies the costs of those firms going through the discovery process. Large firms have a great number of involved employees and departments, all of which would likely be subject to the broad discovery that is characteristic of antitrust litigation. Summary judgment, though normally considered after discovery, is a procedural weapon available at nearly any point in this process, as "a party may file a motion for summary judgment at any time until 30 days after the close of all discovery." The existence of a stay for extension of discovery shows that summary judgment need not automatically wait for discovery's completion, and thus can be an invaluable safeguard against otherwise incredibly costly discovery. This safeguard allows summary judgment to be a powerful tool to radically lower discovery time and costs without "railroad[ing]" the other party. Second, antitrust litigation is normally a slow process that takes a great deal of time. The amount of time necessary to process and review evidence produced by discovery leads to incredible legal costs, often disproportionately placed on the defendant firm. The plaintiff has the advantage over the defendant in deciding the scope of discovery costs, and may often tailor its claim in such a way as to avoid the discovery costs that a defendant's counterclaim may reflect [\*390] back on the plaintiff. These lengthy trials can be effectively truncated by summary judgment, and thus summary judgment's normal value is even greater in the world of antitrust litigation where protracted trials are the norm. Finally, the vast amount of evidence necessary to prove the elements of an antitrust claim contribute to the large discovery costs tied to antitrust litigation by overwhelming judges' ability to reign in discovery costs. Currently, we rely on judges to limit the range of discovery requested, but in the context of antitrust litigation, judges have difficulty dealing with the broad variety of evidence that may be called for. One analysis of the power of discovery described it as a costly and potentially abusive force, and determined judges' abilities to limit discovery costs on their own as "hollow" at best: A magistrate supervising discovery does not--cannot--know the expected productivity of a given request, because the nature of the requester's claim and the contents of the files (or head) of the adverse party are unknown. Judicial officers cannot measure the costs and benefits to the requester and so cannot isolate impositional requests. Requesters have no reason to disclose their own estimates because they gain from imposing costs on rivals (and may lose from an improvement in accuracy). The portions of the Rules of Civil Procedure calling on judges to trim back excessive demands, therefore, have been, and are doomed to be, hollow. We cannot prevent what we cannot detect; we cannot detect what we cannot define; we cannot define "abusive" discovery except in theory, because in practice we lack essential information. Even in retrospect it is hard to label requests as abusive. How can a judge distinguish a dry hole (common in litigation as well as in the oil business) from a request that was not justified at the time? [\*391] Summary judgment can also reduce costs to both parties by reducing time and discovery costs to the parties, and to the judicial system itself, by cutting short lengthy litigation. Both sides often incur costs from employing experts in various areas, researching and producing evidence necessary to prove or disprove elements of antitrust actions, and in the great many legal hours necessary for both plaintiffs and defendants--not to mention costs to the state--during lengthy litigation that is often fruitless due to an "incentive to file potentially equivocal claims." Antitrust law is structured in such a way as to have a "special temptation" for what would otherwise be frivolous litigation. As antitrust law is, by its very nature, between competitors, there is significant motivation to force costs on to other firms, perhaps even through frivolous legal claims or intentionally imposing other large legal costs. Costs can also multiply in antitrust litigation because antitrust actions are often combined with other particularly complex areas of law, such as patent law or class actions. Class actions particularly in the antitrust context can make trials "unmanageable." Combining two already complex areas of law is a recipe for large legal costs and prolonged litigation. The value of cutting costs short cannot be overstated, as antitrust litigation takes place in the arena of business competition. This means that firms are already engaged in close competition for antitrust cases to be relevant, and thus unnecessary costs can further distort the market.

#### Efficient court review underpins patent-led innovation---that stops nuclear war and a range of existential threats

Robert J. Rando 16, Founder and Lead Counsel of The Rando Law Firm P.C., Fellow of the Academy of Court-Appointed Masters, Treasurer for the New York Intellectual Property Law Association, Chair of the Federal Bar Association Intellectual Property Law Section, “America’s Need For Strong, Stable and Sound Intellectual Property Protection and Policies: Why It Really Matters”, IP Insight, June 2016, p. 12-14 [language modified] [abbreviations in brackets]

Robert F. Kennedy’s speech, which includes his reference to the oft-quoted “interesting times” curse, applies throughout history in many contexts and, indeed, with both negative and positive connotation. While he focused on the struggles for freedom and social justice, the requisite ascendancy of the individual over the state, and the institution and integration of those ideals for the greater good, he also promoted the goals of greater global unity, cooperation and communication, which were, and could be, achieved by advances in technology. And, as noted in the excerpt, he championed “the creative energy of men.” Intellectual Property in “Interesting Times” It is beyond question that starting with the last decade of the twentieth century and throughout the first two decades of the twenty-first century, when it comes to matters relating to intellectual property, we have been living in “interesting times.” Some may interpret these interesting times as defined by the curse and others may view it by the ordinary meaning of “interesting.” In either case, those of us that toil in the fields of patents, copyrights, trademarks, trade secrets, and privacy rights have experienced an unprecedented sea change in the way those rights are procured, protected and enforced. Likewise, and perhaps more importantly, even those of us that do not practice in these areas of law, as well as the general public, have been, and continue to be, impacted by the consequences of these changes (both positive and negative). The Changes In Intellectual Property Law Examples of some of the changes in intellectual property law are: the sweeping 2011 legislative changes to the patent laws under the America Invents Act (AIA), which impact is only beginning to be fully appreciated; the various proposals for patent law reform, on the heels of the AIA, beginning with the 113th and 114th Congress; the copyright laws Digital Millennium Copyright Act (DMCA) and numerous 114th Congressional proposed copyright law changes; the recently enacted federal trade secret law (Defend Trade Secrets Act of 2016 (DTSA))2; the impact of the internet, domain names and globalization on Trademark law; the intellectual property law harmonization requirements included in various global/regional trade agreements; and the proliferation of devices (both invasive and non-invasive) that defy any rational basis for believing we can still adhere to the republic’s libertarian understanding of the right to privacy. Without engaging in “chicken and egg” analysis, it is sufficient to observe that technological advancement, societal needs, globalization, existential threats, economic realities, and political imperatives (or what James Madison referred to in the Federalist Papers No. 10 as factious governance), have combined to create the “interesting times” for the United States [IP] intellectual property laws. What was said by Bobby Kennedy in 1966 remains true today. We live in dangerous and uncertain times. Many of the existential threats remain the same (nuclear war and proliferation, [genocides] ~~genocidal maniacs~~ and natural disease) and some are new ([hu]manmade disease, greater awareness of environmental changes and possibly human interrelationship factors, and the unintended consequences of genetic manipulation and robotic technologies). The danger and uncertainty that pervades changes in intellectual property laws, though not an existential threat of the same manner and kind, correlates with the threat and remains “more open to the creative energy of man than any other time in history.” Apropos the creative energy of man, there is a non-coincidental congruence and convergence of activity across and among the three branches of government, occurring almost simultaneously with the congruence and convergence of the rapid developments of technological innovation across various scientific disciplines and the information age, reflected in the transformation of the [IP] intellectual property laws in the United States. Patents The passage of the AIA was a culmination of efforts spanning several years of Congressional efforts; and the product of a push by the companies at the forefront of the twenty-first century new technology business titans. The legislation brought about monumental changes in the patent law in the way that patents are procured (first inventor to file instead of first to invent) and how they are enforced (quasi-judicial challenges to patent validity through inter-party reviews at the Patent Trial and Appeals Board (PTAB)). The 113th and 114th Congress grappled with newly proposed patent law reforms that, if enacted, may present additional tectonic shifts in the patent law. Major provisions of the proposals include: fee-shifting measures (requiring loser pays legal fees - counter to the American rule); strict detailed pleadings requirements, promulgated without the traditional Rules Enabling Act procedure, that exceed those of the Twombly/Iqbal standard applied to all other civil matters in federal courts, and the different standards applicable to patent claim interpretation in PTAB proceedings and district court litigation concerning patent validity. The Executive and administrative branch has also been active in the patent law arena. President Obama was a strong supporter of the AIA3 and in his 2014 State Of The Union Address, essentially stated that, with respect to the proposed patent law reforms aimed at patent troll issues, we must innovate rather than litigate.4 Additionally, the USPTO has embarked upon an energetic overhaul of its operations in terms of patent quality and PTO performance in granting patents, and the PTAB has expanded to almost 250 Administrative Law Judges in concert with the AIA post-grant proceedings’ strict timetable requirements. The Supreme Court, not to be outdone by the Articles I and II branches of the U.S. government, has raised the profile of patent cases to historical heights. From 1996 to the 2014-15 term there has been a steady increase in the number of patent cases decided by the SCOTUS5. The 2014-15 term occupied almost ten percent of the Court’s docket. Prior to the last two decades, the Supreme Court would rarely include more than one or two patent cases in a docket that was much larger than those we have become accustomed to from the Roberts’ Court6. While the SCOTUS activity in patent cases is viewed by some as a counter-balance to the perceived Federal Circuit’s pro-patent and bright line decisions, it can just as assuredly be viewed as decisions rendered by a Court of final resort which does not function in a vacuum devoid of the social, economic and political winds of the times. In recognition of the effect new technologies have on the patent law, the politicization of intellectual property law matters, especially patent law (through factious governing principles of the political branches of the government), and the maturation of the Federal Circuit patent law jurisprudence, the SCOTUS has rendered opinions in cases that impact, and perhaps are/were intended to mitigate the concerns regarding, some of the vexing issues confronting the patent community today (e.g., non-practicing entities or in the politicized parlance “patent trolls,” the intersection of patent and antitrust laws in Hatch-Waxman so called “pay-for-delay” settlements between Branded and Generic pharma companies, and the fundamental tenets that comprise the very heart of what is patent eligible subject matter). Copyrights The advent and ubiquity of the internet, social media and digital technologies (MP3s, Napster, Facebook, YouTube, and Twitter) represents the impetus for changes in the Copyright laws. The DMCA addressed the issues presented by these advances or changes in the differing media and forms of artistic impressions. The proliferation of digital photos, graphic designs and publishing alternatives, as well as adherence to globalization harmonization have given rise to changes in the statutory law and jurisprudence in this area of intellectual property law. Additionally, there is an overlap of patent rights and copyrights for software driven by the ebb and flow of the strength of each respective intellectual property protection. Notably, the Patent and Copyright Clause7, in addition to Author’s writings, has been viewed as discretely applying to two different types of creativity or innovation. When drafted the “sciences” referred not only to fields of modern scienctific inquiry but rather to all knowledge. And the “useful arts” does not refer to artistic endeavors, but rather to the work of artisans or people skilled in a manufacturing craft. Rather than result in ambiguity or confusion, perhaps the Framers were either quite prescient or, just coincidentally, these aspects of the Patent and Copyright Clause have converged. For example, none other than the famous Crooner, Bing Crosby, benefited from both protections. Well-known as a prolific and popular recording artist he also benefited from his investments in the, then innovative, recording technologies. Similarly, the Beatles, Beach Boys, as well as many other rock and roll artists, experimental efforts in music performance, recording and production, helped to transform the music industry in both copyrightable artistic expression and patentable inventions. Similarly, film, literary and digital arts reap benefits at the crossroads of both copyright and patent protections. Trademarks Trademark laws have been impacted by numerous changes in the business landscape. They include the internet, Domain names, international rights in a global economy, different venues and avenues for branding, marketing and merchandising, global knock-offs from nations that have a less than stellar respect for intellectual property rights, and international trade agreements. More recently, politicization (or perhaps political correctness) has creeped into the trademark law arena pitting branding rights and protections against first amendment rights. Trade Secrets As with Copyright and Trademark law, trade secrets law includes some of the same issues related to trade agreements. TRIPS required members to have trade secret protection in place. Initially, the United States compliance with this requirement has relied upon the trade secret law of the individual states. That compliance may be supplanted by the recently enacted DTSA. Similarly, the Trans Pacific Partnership (TPP) trade agreement contains intellectual property rights provisions that will trigger required changes to United States statutory Intellectual Property Laws. The proposed trade secret legislation also gives rise to several concerns. For instance, there is an absence of a specific definition for trade secret, as well as potential issues of federalism, conflict with state law precedent (despite no preemption), remedies, and the impact on employer/employee relations. There is also a real concern that the strengthening of trade secret protection in conjunction with the perceived weakening of patent protection (e.g., high rate of invalidating patents in post-grant proceedings before the PTAB and strict limitations on what is patent eligible subject matter) may very-well have the unintended consequence of contravening the purpose behind the Patent and Copyright Clause: “to promote the progress of the sciences and the useful arts.” Moreover, the incentive to innovate may very well be usurped by the advantage of withholding patent law disclosure of highly beneficial scientific advancements that directly affect the human condition, alter life expectancies and the evolution of the human species (rather than by mere “natural selection”), and what is the very essence of a human being (for better or worse). Thus, crippling innovation and the progress of the sciences and useful arts. Privacy Rights It is increasingly more difficult to function “off the grid.” The invasive and non-invasive attributes of the internet, the reliance upon the multitude of devices, social media, and information age technologies, and access to big data, all contribute to the decrease in and dilution of the right to privacy. Wittingly or otherwise, the strong libertarian roots of the republic have been replaced by dependence upon these modes of an information-age life. Commentary on the benefits and deficits of this reality are beyond the subject and purpose of this writing. Suffice to acknowledge that the right to privacy has been significantly reduced. The laws that protect these rights are in a constant struggle to maintain those rights while yielding to the demands of the lifestyle and security concerns. Laws that relate to cybersecurity in the global and domestic space create interplay with privacy rights. Legislation, trade agreements and jurisprudence all impact this area of intellectual property. Cross-border theft of trade secrets, competitor espionage, and loss of control over personal data are all implicated in the intellectual property law arena. America’s Need For Strong Intellectual Property Protection The need for strong protection of intellectual property rights is greater now than it was at the dawn of our republic. Our Forefathers and the Framers of the U.S. Constitution recognized the need to secure those rights in Article 1, Section 8, Clause 8. James Madison provides insight for its significance in the Federalist Papers No. 43 (the only reference to the clause). It is contained in the first Article section dedicated to the enumerated powers of Congress. The clause recognizes the need for: uniformity of the protection of IP rights, securing those rights for the individual rather than the state; and, incentivizing innovation and creative aspirations. Underlying this particular enumerated power of Congress is the same struggle that the Framers grappled with throughout the document for the new republic: how to promote a unified republic while protecting individual liberty. The fear of tyranny and protection of the “natural law” individual liberty is a driving theme for the Constitution and throughout the Federalist Papers. For example, in Federalist No. 10, James Madison articulated the important recognition of the “faction” impact on a democracy and a republic. In Federalist No. 51, Madison emphasized the importance of the separation of powers among the three branches of the republic. And in Federalist No. 78, Alexander Hamilton, provided his most significant essay, which described the judiciary as the weakest branch of government and sought the protection of its independence providing the underpinnings for judicial review as recognized thereafter in Marbury v. Madison. All of these related themes are relevant to the Patent and Copyright Clause and at the center of the intellectual property protections then and now. The Federalist Papers No. 10 recognition that a faction may influence the law has been playing itself out in the halls of congress in the period of time leading up to the AIA and in connection with the current patent law reform debate. The large tech companies of the past, new tech, new patent-based financial business model entities, and pharma factions have been the drivers, proponents and opponents of certain of these efforts. To be sure, some change is inevitable, and both beneficial and necessary in an environment of rapidly changing technology where the law needs to evolve or conform to new realities. However, changes not premised upon the founding principles of the Constitution and the Patent and Copyright Clause (i.e., uniformity, secured rights for the individual, incentivizing innovation and protecting individual liberty) run afoul of the intended purpose of the constitutional guarantee. Although the Sovereign does not benefit directly from the fruits of the innovator, enacting laws that empower the King, and enables the King to remain so, has the same effect as deprivation and diminishment of the individual’s rights and effectively confiscates them from him/her. Specifically, with respect to intellectual property rights, effecting change to the laws that do not adhere to these underlying principles, in favor of the faction that lobbies the most and the best in the quid pro quo of political gain to the governing body threatens to undermine the individual’s intellectual property rights and hinder the greatest economic driver and source of prosperity in the country. It is also important to recognize that the social, political and economic impact of strong protections for intellectual property cannot be overstated. In the social context, the incentive for disclosure and innovation is critical. Solutions for sustainability and climate change (whether natural, man-made or mutually/marginally intertwined) rely upon this premise. Likewise, as we are on the precipice of the ultimate convergence in technologies from the hi-tech digital world and life sciences space, capturing the ability to cure many diseases and fatal illnesses and providing the true promise of extended longevity in good health and well-being, that is meaningful, productive, and purposeful; this incentive must be preserved. In similar fashion, advancements in technologies related to the global economy and communications will enhance the possibilities for solutions to political and cultural conflicts that arise around the globe. Likewise, the United States economy has always benefited when it is at the forefront of innovation and achieves prosperity from its leadership role in technological advancements. Conclusion As was the case in 1966, how we move forward today, to solve the many problems facing our country and the broader global community in these “interesting times,” both within and without the laws affecting intellectual property rights, depends upon the “creative energy of man” which must prevail. An achievable goal, dependent on the strong, stable and sound protection of intellectual property rights.

## Politics

#### Infrastructure will pass, but it will take Biden PC

Will Marshall (opinion editor) 10/12/2021 [“Democrats need a win — now” online @ <https://thehill.com/opinion/finance/576292-democrats-desperately-need-a-win>, loghry]

In politics, success tends to beget success. That truism apparently eluded leftwing Democrats on Sept. 30 when they refused to vote for President Biden’s $1.2 trillion bipartisan infrastructure bill. Instead of basking in accolades for having passed a second landmark achievement to go with Biden’s $1.9 trillion American Rescue Plan, Democrats are treating the public to an extended exhibition of their inability to forge the internal consensus necessary to govern. Even as clogged U.S. ports and long delays in delivering goods of all kinds underscore the urgent need for upgrading the nation’s economic infrastructure, the Congressional Progressive Caucus vows to persist in blocking the bill if they don’t get their way on a follow-on reconciliation bill that would spend trillions more on new social entitlements and climate protection. That’s sewn anger and mistrust among moderate House Democrats, who were promised a vote and stood ready to pass the infrastructure bill last month. House Speaker Nancy Pelosi (D-Calif.) set a new deadline for a vote — Halloween, fittingly enough. To arrest the administration’s faltering momentum, Democrats need a big political win, and soon. Buffeted by vaccine hesitancy and the delta variant’s surge, as well as the chaotic U.S. exit from Afghanistan, the president’s approval ratings have tumbled by 10 points since June. That’s a worry for Democratic candidates, especially former Virginia Gov. Terry McAuliffe, who’s locked in a tight race for a second term in a state Biden won by 10 points in 2020. The impasse over infrastructure is odd in two respects. First, progressives claim they too want to spend big on nation-building at home. But it doesn't seem to be their top priority. Their message couldn’t be clearer: Redistributing wealth takes precedence over strengthening the economy. Is that really the message Democrats want to run on in next year’s midterm elections? Even more perplexing, the White House, and sometimes the president himself, seemed to encourage leftist obstruction as a way of pressuring two moderate Democratic senators, Joe Manchin (W.Va.) and Kyrsten Sinema (Ariz.), into supporting the $3.5 trillion reconciliation bill. The strong-arm tactics haven’t worked, and have left bruised feelings among not only the senators but also many moderate House Democrats who also don’t support the entire progressive wish list. Now the fate of both bills is uncertain as the White House belatedly struggles to broker a compromise that balances the needs of both leftwing and centrist Democrats. What we’ve witnessed is anything but a deft exercise in coalition management. Despite all the heady rhetoric about ushering in “transformative change,” it was never likely that Democrats would pass changes on a New Deal scale with razor-thin majorities in the House and Senate. What’s more, Democrats representing battleground districts and states face electorates that are skeptical of the left’s big tax and spending ambitions. Since they make the difference between their party being in the majority or out of power, their values and interests also must be accommodated. Nonetheless, it’s hard not to sympathize with President Biden’s desire to “go big” in helping Americans hit hard by the long COVID-19 pandemic and recession. That’s a tribute to his empathy, and fortunately for him and the country, it’s a goal he can still achieve. The imperative now is to get both bills unstuck by persuading progressives to compromise on a reconciliation package with a price tag between $1.9 trillion and $2.3 trillion. Democrats need to fashion a more disciplined and focused reconciliation package that aims at doing a few things right rather than throwing money at a plethora of new entitlements. A blueprint at the Progressive Policy Institute, where I serve as president, sets three core, progressive priorities: supporting working families and children, combating climate change and expanding access to affordable health care for those in need. It would cost roughly $2 trillion and could plausibly be paid for by raising taxes on the wealthy and strengthening federal tax compliance. A Build Back Better package totaling between $2 trillion and $3 trillion for both bills is within striking distance for Biden and his party. Only on the dreamscape of democratic socialism can spending of that magnitude be considered chump change. By historical standards, it’s big change. The left’s latest gambit is to pass all the programs in their original $3.5 trillion grab bag but set them to expire after a few years so they appear less expensive in the Congressional Budget Office’s official 10-year score. This is bad policy that would make it easier for a future Republican Congress to simply let programs expire rather than trying to abolish them, as Republicans failed to do with ObamaCare. “For President Biden’s legacy, it’s important to make these longer-term investments and not have short-term cliffs,” said Rep. Suzan DelBene (D-Wash.), leader of the mainstream New Democrat Coalition. The “haircut” gimmick is also dubious politics, because it’s harder to communicate to voters a clear rationale for a jumble of smallish or temporary new programs than a few big initiatives with real power to change lives. Democrats control the White House and, however tenuously, Congress. They don’t have the luxury of endless negotiations aimed at appeasing the left. To regain political momentum, Democrats need a win. The best way to get one is to pass the infrastructure bill as soon as possible and work on a pragmatic reconciliation bill that better reflects their philosophically diverse coalition.

#### Antitrust reform requires PC and trades off with other legislative priorities.

Peter C. Carstensen 21, the Fred W. & Vi Miller Chair in Law Emeritus, University of Wisconsin Law School, February 2021, “THE “OUGHT” AND “IS LIKELY” OF BIDEN ANTITRUST,” https://www.concurrences.com/en/review/issues/no-1-2021/on-topic/the-new-us-antitrust-administration-en

14. Similarly, despite bipartisan murmurs about competitive issues, the potential in a closely divided Congress that any major initiatives will survive is limited at best. In part the challenge here is how the Biden administration will rank its commitments. If it were to make reform of competition law a major and primary commitment, it would have to trade off other goals, which might include health care reform or increases in the minimum wage. It is likely in this circumstance the new administration, like the Obama administration’s abandonment of the pro-competitive rules proposed under the PSA, would elect to give up stricter competition rules in order to achieve other legislative priorities.

15. Another key to a robust commitment to workable competition is the choice of cabinet and other key administrative positions. Here as well, the early signs are not entirely encouraging. In selecting Tom Vilsack to return as secretary of agriculture, the president has embraced a friend of the large corporate interests dominating agriculture who has spent the last four years in a highly lucrative position advancing their interests. Given the desperate need for pro-competitive rules to implement the PSA and control exploitation of dairy farmers through milk-market orders, the return of Vilsack is not good news. Who will head the FTC and who will be the attorney general and assistant attorney general for antitrust is still unknown, but if those picks are also centrists with strong links to corporate America the hope for robust enforcement of competition law will further attenuate!

16. In sum, this is a pessimistic prognostication for the likely Biden antitrust enforcement agenda. There is much that ought to be done. But this requires a willingness to take major enforcement risks, to invest significant political capital in the legislative process, and to select leaders who are committed to advancing the public interest in fair, efficient and dynamically competitive markets. The early signs are that the new administration will be no more committed to robust competition policy than the Obama administration. Events may force a more vigorous policy—I will cling to that hope as the Biden administration takes shape.

#### Infrastructure bill is key to revitalize grids and cybersecurity.

Riley ’21 — Tonya, Researcher and reporter at the Washington Post. "The Cybersecurity 202: Democrats' new infrastructure bill highlights cybersecurity concerns." Washington Post. 3-12-2021. https://www.washingtonpost.com/politics/2021/03/12/cybersecurity-202-democrats-new-infrastructure-bill-highlights-cybersecurity-concerns/. accessed 3-17-2021 //ART

The House's new $312 billion infrastructure bill, as part of that push, aims to secure the country's most critical infrastructure – and increase the cybersecurity of essential services, including hospitals, broadband, and the electric grid. A recent string of high-profile cyberattacks pushed long-neglected cybersecurity issues to the center of national policy discussions. “The infrastructure in the United States is in sore need of updates and the fact that Congress is now recognizing the importance of upgrading not just physical infrastructure, but cybersecurity infrastructure is a sign of a new importance and awareness of cybersecurity,” says John Gilligan, president and CEO of the Center for Internet Security, a cybersecurity nonprofit. Key cyberse'curity-related investments in the bill include $10 billion to help hospitals guard against cyber criminals and roughly $3.5 billion for electric grid security. Mounting high-profile cybersecurity incidents have made the problem hard to ignore. “Over the last year, we’ve seen the devastating results of inaction: major power outages, water shortages, health care facilities stretched to the limit, and communities left behind due to the digital divide,” Energy and Commerce Committee Chairman Frank Pallone Jr. (D-N.J.) said in a statement introducing the bill. In February, Florida police revealed that a hacker tried to poison the water supply of the town of Oldsmar. And although not the result of a cyberattack, the fallout of a mass grid failure in Texas raised alarms from researchers and lawmakers about cybersecurity weaknesses in America's power systems that could lead to a much worse outage. During the coronavirus pandemic, hospitals have been hit with a surge of dangerous attacks in which attackers locked up data and systems in exchange for a ransom, leaving hospital services unavailable. Congress is also scrambling to respond to a Russian attack on software company SolarWinds, which resulted in the hacking of at least nine federal agencies, as well as a recent Chinese-tied campaign against a vulnerability in Microsoft software. Both are used heavily by the government and critical industries including the energy sector. Biden last month signed an executive order requiring a review of the security of America's supply chains and is expected to sign another executive order addressing cybersecurity improvements in critical software systems. A bipartisan group of members of the House Committee on Homeland Security yesterday introduced a bill that would cement the role of the Cybersecurity and Infrastructure Security Agency in protecting critical infrastructure. Incidents such as the one in Florida are a wake-up call that the U.S. government needs to do more to defend critical infrastructure, said the committee's ranking Republican, Rep. John Katko (N.Y.), who led the bill. “These systems operate many vital components of our nation’s critical infrastructure and remain under constant attack from cyber criminals and nation state actors,” he said in a statement.

#### Cyber-attacks on the electric grid are imminent recent attacks prove means and motive

Layton, Chief Intelligence Officer 16 (Tim, @SurfWatch Labs, Principal for Cisco’s Global Enterprise Cybersecurity Theatre, Principal for EMC’s Security & Risk Management, Vice President for Wells Fargo, 4/1/16, “U.S. Electric Grid - America the Vulnerable,” DOA: 8/22/16, <http://www.securityweek.com/us-electric-grid-america-vulnerable>)

In the new digital age, the **threat of** cyber attack reaches every part of modern society. Electrical power runs just about every aspect of life for most people, and most are not prepared when the power source is interrupted or goes away. A public announcement could be made one week ahead of time, and the majority of people would still be in the same vulnerable position if the power were to go away abruptly. Last year Lloyd's published a report titled "Business Blackout" where they shared their analysis and findings of an imminent cyber attack on the U.S. power grid. In their attack scenario, attackers were able to inflict physical damage on 50 of the 700 generators on the electrical grid on the east coast where there is a substantial population of people in major cities that includes New York City, Washington D.C. and Boston. In this situation, 93 million people were affected by a blackout. **There would** most certainly **be** mass chaos among the population, **and** the **total impact to the USA** in the Lloyd's report **is** estimated at $243 billion dollarsandrising to over $1 trillion in extreme cases. In an already fragile and recovering economy, an attack like this could ~~cripple~~ [devastate] the country and most certainly disrupt any momentum the economy had been able to gain. Not only is **this** scenario possible, I believe it is imminent. Based on existing intelligence, it is reasonable to assume that nation-states already possess all the information they need to launch such an attack on the U.S. power grid - they choose not to because of political implications. I also believe the USA possesses the same capabilities. It isn't just nation-states that we need to be concerned with, as radical terrorist groups are highly motivated to bring harm to the American people and economy. Current State of Affairs The U.S. power system is outdated, and it was never designed with network security in mind. Experts have described the U.S. power grid as decrepit and seriously out of date. **By** connecting U.S. electric plants to the Internet**, a** new and **bountiful** supply of attack points and back doors **have** been **opened up to attackers**. Further complicating the security challenges in the new digital frontier is hundreds of contractors create and sell software and equipment to the energy companies. This software and hardware has weaknesses that can be exploited. The companies themselves serve as a portal into the electric grid because they are connected their customers. Just three months ago, the Ukraine power grid suffered a cyber attack and the outage impacted 225,000 people. This is the first time the U.S. Government officially recognized that a blackout was caused by a malicious cyber attack. Security researchers attribute the attack to a Russian hacking group known as Sandworm. Malicious software was used in this attack to remotely switch off breakers **controlling** the **power** to the public. A coordinated attack was launched by the criminals that aimed at keeping legitimate customers from reporting their power outages. We know based on history with malware, **once the** software **is** **out** in the wild, **it** can be modified **for future attacks** and **with** a **high degree of success**. We have seen this pattern in other industry verticals such as the financial sector. Within the energy sector, here are just a few examples of reported attacks or attempted attacks: • In 2012 and 2013 Russian hackers were able to successfully send and receive encrypted commands to the U.S. power generators. • The Department of Homeland Security (DHS) announced last year that unauthorized cyber hackers were able to inject malicious software into the grid operations that allowed spying on U.S. energy companies. • In October of last year, US law enforcement officials reported a series of cyber attacks that were attempted by ISIS targeting the U.S. power grid. • In December 2015, the Associated Press reported that "security researcher Brian Wallace was on the trail of hackers who had snatched a California university's housing files when he stumbled into a larger nightmare: cyber attackers had opened a pathway into the networks running the United States power grid." Home Security Deputy Secretary Alejandro Mayorkas acknowledged in an interview, "we are not where we need to be" on cybersecurity. \*edited for ableist language

#### Risk of a nuclear cyberattack is high – nuclear terrorism, meltdowns, false flag missile strikes – breaks down national security

NTI 15 (The Nuclear Threat Initiative – THE NUCLEAR THREAT INITIATIVE PROTECTS LIVES, THE ENVIRONMENT AND OUR QUALITY OF LIFE NOW AND FOR FUTURE GENERATIONS. Every day, we work to prevent catastrophic attacks with weapons of mass destruction and disruption—nuclear, biological, radiological, chemical and cyber. – “ADDRESSING CYBER-NUCLEAR SECURITY THREATS” – Nuclear Threat Initiative – Oct 25, 2015 – http://www.nti.org/about/projects/addressing-cyber-nuclear-security-threats/)

What if a hacker shut down the security system at a highly sensitive nuclear materials storage facility, giving access to terrorists seeking highly enriched uranium to make a bomb? What if cyber-terrorists seized control of operations at a nuclear power plant--enabling a Fukushima-scale meltdown? Or, worse, what if hackers spoofed a nuclear missile attack, forcing a miscalculated retaliatory strike that could kill millions? The cyber threat affects nuclear risks in at least two ways: It can be used to undermine the security of nuclear materials and facility operations, and it can compromise nuclear command and control systems. Traditional nuclear security practices have been focused on preventing physical attacks—putting in place “guns, guards, and gates” to prevent 1) theft of materials to build a bomb, 2) sabotage of a nuclear facility, or 3) unauthorized access of nuclear command, control, and communications systems. Important progress has been made in this "traditional" nuclear security arena, but the threat of a cyber attack is escalating. All countries are vulnerable, and nuclear cybersecurity practices haven't caught up to the risk. Across the nuclear sector worldwide, the technical capacity to address the cyber threat is extremely limited, even in countries with advanced nuclear power and research programs. Measures to guard against the cyber-nuclear threat are virtually non-existent in states with new or emerging nuclear programs. Expertise in the field of nuclear cybersecurity is in short-supply, and the International Atomic Energy Agency (IAEA), which provides countries with assistance and training in this area, does not have the resources necessary to address the growing threat. The threat extends to the command, control, and communications (NC3) for nuclear weapons. Even in the United States, officials have stated that it cannot be fully confident that these systems will operate as planned if attacked by a sophisticated cyber opponent. Such attacks could jeopardize the confidence of U.S. officials of our nuclear systems, lead to false warning or even potentially allow an adversary to take control of a nuclear weapons system.

## FTC

#### Antitrust law enforcement has two areas of focus now: health care and big tech. Health care is under the radar.

Levine 8-25-2021, master’s degree from the Columbia University Graduate School of Journalism and a bachelor of arts in English from the University of Pennsylvania. She is also an alumna of the Fellowships at Auschwitz for the Study of Professional Ethics, a program in Germany and Poland that explores the ethics of reporting on politics, war and genocide (Alexandra, “How Biden's tech trustbuster could change health care,” *Politico*, <https://www.politico.com/newsletters/future-pulse/2021/08/25/how-bidens-tech-trustbuster-could-change-health-care-797333>)

Lina Khan’s Federal Trade Commission has its eyes on health care. The agency known for efforts to rein in Big Tech companies like Facebook and Amazon is also enmeshed in high-stakes health care and health tech battles that extend well beyond Silicon Valley. Case in point: The FTC trial that kicked off yesterday examining monopoly concerns in the market for cancer screening technology. (More on that below.) That closely watched antitrust case — involving the giant Illumina and startup Grail — predates Khan’s confirmation as FTC chair. But it underscores how health issues are looming over the agenda, particularly heading into the pandemic's second year. The way health care companies and consumer health apps handle sensitive data “is an area that I'm sure [Khan’s] very, very interested in,” said Jessica Rich, former director of the FTC’s consumer protection bureau, adding that the Biden administration's FTC will also be closely scrutinizing hospital mergers. “I expect her and the commission to take a very bold approach to what constitutes harm for both,” Rich said. “I expect her to pay close attention to algorithms and potential discrimination in health care, both denials and pricing issues which the FTC's laws can address.” The FTC’s jurisdiction touches nearly the entire health economy. While its competition bureau looks at health care mergers like the Illumina-Grail deal, its consumer protection side is focused on health privacy and data security issues, as well as fighting bogus medical claims on everything from weight loss to Covid cures. When Congress passed the Covid-19 Consumer Protection Act last year, the agency was granted new authority to police Covid scams. Although Khan hasn't spoken publicly about her health care agenda, she's likely to take issue with health apps and companies whose business models maximize, incentivize and monetize data collection. Of particular concern is how firms disclose what they’re doing with consumers’ data — and whether it may still be deceptive or unfair.

#### New enforcement priorities trigger a tradeoff from health care

Abbott 21, formerly served as general counsel of the Federal Trade Commission (Alden, “Lack of Resources and Lack of Authority Over Nonprofit Organizations Are the Biggest Hindrances to Antitrust Enforcement in Healthcare,” <https://www.mercatus.org/publications/antitrust-and-competition/lack-resources-and-lack-authority-over-nonprofit>)

Appropriate federal antitrust and consumer protection enforcement is good for the American economy. It promotes enhanced competition and consumer welfare. Regrettably, however, the effectiveness of federal enforcement in achieving these benefits is threatened by insufficient resources. As FTC Acting Chair Rebecca Kelly Slaughter explained in her April 20 testimony before the US Senate Committee on Commerce, Science, and Transportation, FTC employment has remained flat despite a growing workload, with merger filings doubling in recent years. Lauren Feiner reports on that testimony: “The absence of resources means that our enforcement decisions are harder,” [Slaughter] said. “If we think that we have a real case, a real law violation in front of us, but a settlement on the table that is maybe OK but doesn’t get the job done, we have to make difficult decisions about whether it’s worth spending a lot of taxpayer dollars to go sue the companies who are going to come in with many, many law firms worth of attorneys and expensive economic experts, versus taking that settlement.” I can attest to the accuracy of Slaughter’s observation, based on my experience as FTC general counsel in the Trump Administration. During my tenure, the FTC did indeed have to contend with resource limitations that adversely affected merger enforcement decision-making. The problem of resource constraints is particularly acute in the case of healthcare merger reviews, given the increasing consolidation of healthcare institutions. As one noted healthcare scholar stated in 2019, “The Affordable Care Act did not start the consolidation rapidly occurring with hospitals/health systems and medical groups, but it most definitely accelerated the movement to combine. In the last five years, the number and size of consolidations have been at an all-time high.”

#### Health consolidation collapses public health

Numerof 20, PhD @ Bryn Mawr, internationally recognized consultant and author with over 25 years of experience in the field of strategy development and execution, business model design, and market analysis (Rita, “Covid-Induced Hospital Consolidation: What Are The Impacts On Consumers, And Potentially The President,” *Forbes*, <https://www.forbes.com/sites/ritanumerof/2020/11/11/covid-induced-hospital-consolidation-what-are-the-impacts-on-consumers-and-potentially-the-president/?sh=692d6fc94da0>)

Covid-19 has initiated yet another wave: A wave of hospital mergers and acquisitions that will have devastating consequences for public health if industry doesn’t soon execute an about-face. Whether because they’re on the brink of bankruptcy and have subscribed to the half-truth that size is protective, or because they think they can score some good deals and believe scale and success are synonymous, the financial fallout of Covid-19 has caused many hospital executives to make consolidation a core part of their future plans. With the intent of increasing care quality and decreasing consumer costs despite these challenging times, the merger between Shannon Medical Center and Community Hospital and partnership between Intermountain and Sanford Health are just two examples. There are multiple reasons why consumers absolutely cannot afford for industry to bulk up in an effort to weather this storm. The first is that the positive efforts executives claim consolidation will help them accomplish often prove to be futile. Research shows that wherever market concentration is high, there are also higher prices for both consumers and the employers who provide their healthcare coverage. In the absence of competition, costs increase and quality deteriorates. That’s the opposite of progress. Second, generally speaking, the union of two institutions with operational shortcomings only creates one larger institution with even more operational shortcomings! That’s not progress either. Third, Covid-induced consolidation will only make future progress many times more difficult. The larger an organization is, the more it will struggle to rapidly adapt to healthcare disruptions like we’re seeing today. Retail giants like Walmart, Walgreens, Amazon and CVS are pivoting to cater to healthcare consumer demands for affordability and accessibility. Right now, they’re still a blip on the radar relative to mainstream healthcare delivery, but they are looking to eventually corner the market and drive the industry forward. And as they continue down this path, consolidated healthcare systems will be left behind, potentially at the expense of the consumers in that area. The potential impact of continued consolidation on rural patients is especially concerning. Rural communities may have a limited number of the big-box retailers mentioned above. And the unfortunate fact of the matter is that when a larger hospital or health system purchases a smaller, rural hospital, it’s usually only a matter of time before the purchasing system realizes that unless they drastically pare down and reconfigure operations, the acquired hospital will never be profitable. Many eventually decide to close up shop, in some instances reducing or even eliminating rural patients’ options for care delivery. In the absolute worst-case scenario, this is exactly the reality all consumers could face if consolidation continues at its current pace. In theory and if left unchecked, all of the hospitals in the United States could be owned by only a handful of mammoth systems that then lack incentive to continually deliver quality services at lower total cost of care.

#### Strong public health infrastructure prevents bioterror attacks

Kosal 14, Adjunct Scholar to the Modern War Institute at the US Military Academy/West Point, Ph.D. in Chemistry from the University of Illinois at Urbana Champaign, Associate Professor at The Sam Nunn School of International Affairs at Georgia Tech (Margaret E. Kosal, “A New Role For Public Health in Bioterrorism Defense,” Frontiers in Public Health, Volume 2, Article 278)

In thinking about public health infrastructure as an active or passive part of new deterrence strategies, it is useful to think about the role of missile defense. As the presence of a ballistic missile defense system is supposed to be an existential deterrent itself, so could be a strong public health system. Missile defense is both a passive deterrent and, if used, an active deterrent, as it stops something from occurring. A strong public health infrastructure is likely to be the key in reducing the vulnerability to bioterrorism attack, as well as having a potential role in deterring a foreign terrorist group from even considering such an attack. If a biological weapon launched by a terrorist group will have little or no effect on the target country because of a known robust public health sector, then a foreign terrorist may be discouraged from launching a biological weapons attack in the first place. If foreign terrorists are also aware of the weak public health infrastructure with their own borders, and the increased risks to them and their publics in the event of an accident in developing biological weapons and/or spread of an infectious disease that they might launch, this may also deter them from pursuing this work. In addition, even the accidental release of a dangerous pathogen or the spread of an infectious disease via attack will most likely cause disproportional negative effects to nations with limited public health infrastructures and affect tacit and explicit supporters in those states. The role of a robust public healthcare system for its deterrence capacity can be explored through empirically driven case study methods against predominant theories of deterrence in political science (14, 15) and in comparison to other works considering the possibility of deterring bioterrorism (16–20). For example, the re-emergence of polio offers a potentially useful example to think about the effects of a potential bioterrorist attack on the developed and the developing world. Polio is both a contagious infectious disease and transmissible from human-to-human (like smallpox and plague). The poliovirus is highly transmissible with a basic reproductive rate or secondary transmission rate (R0) exceeding most suspected biological agents, e.g., standard estimates of R0 for polio range from 5 to 7 (21, 22), whereas R0 for suspected bioterrorist agents like smallpox (1.8–3.2) (23–25); pneumonic plague (0.8–3.0) (26, 27); and even Ebola (1.34–2.0) (28, 29) are lower. It is not a likely biological terrorism agent, however, due to the low-mortality associated with infection. It is, however, a useful model for thinking about the spread of infectious disease and the importance of a robust public health infrastructure as a deterrence strategy. At the beginning of 2003, the complete eradication of polio appeared to be within the grasp of the World Health Association and its many partners. In 1998, the World Health Organization estimated there were over 365,000 new cases of polio; by early 2003, the rate of infection had declined to <1,000 new cases worldwide due to a vigilant vaccination effort (30). That trend was interrupted, however, when Nigerian citizens refused to be vaccinated after hearing unfounded allegations of contaminated vaccines that would lead to sterility or cause HIV/AIDs. Before 2003, polio had largely been confined to only a handful of countries; Nigeria, India, Pakistan, and Afghanistan accounted for 93% of the world’s cases (31). What started with the refusal of local clerics to allow vaccination led to the reestablishment or importation of the poliovirus to 14 countries that were previously disease-free. Transport of the contagious virus was not limited to neighboring African states. The poliovirus moved through Sudan to Ethiopia crossing the Red Sea to Lebanon and Yemen. The latter was been particularly severely affected, witnessing more than 500 new cases in the first half of 2005. The poliovirus spread as far as Indonesia, where it afflicted more than 150 people in a single year in 2 provinces, predominantly children (32). Prior to this outbreak, Indonesia had been polio free for nine years. Genetic fingerprinting confirmed that the strain imported to Indonesia came from northern Nigeria through Sudan, most closely resembling an isolate recovered in Saudi Arabia in December 2004. A pilgrim returning from Mecca or a returning foreign worker is suspected to have brought the virus to the island of Java, across an ocean and thousands of miles from its source. The polio virus continues to persist in a limited number of states in the developing world, specifically in Nigeria, Afghanistan, and Pakistan, where a ban on vaccination by Islamist leaders in Waziristan remains in place. Since 2013, polio (linked genetically to the strain in Pakistan) has spread from Syria to Iraq (33). Countries that have witnessed the re-emergence of poliovirus outbreaks have some crucial links: social and political challenges that have impeded the development and implementation of appropriate public health infrastructures and measures. Not unexpectedly, there is an inverse relationship between government health expenditure in health and number of polio cases. Looking at the spread of polio can provide us with a lens to think about the impacts of bioterrorism in states with developed public health infrastructures and those who do not. A bioterrorist attack, especially one with a contagious agent like smallpox or pneumonic plague, will likely impact the developing parts of the world substantially more than the US. One only has to look as far as polio’s re-emergence (or more recently the outbreak of Ebola virus disease in West Africa) to see the very real repercussions of a contagious virus and how the most dire causes and effects of infection and spread stem from poor public health infrastructures (34). Creating a new deterrence strategy for bioterrorism is needed. Credibly, communicating the differential capacities to respond and the comparative likely outcomes will require diplomacy, coordination with civil affairs, specialized knowledge of individual states, and regions of the developing world. These are fundamentally interdisciplinary efforts that should leverage small teams from diplomatic, development, public health, and defense communities. One single parochial voice will be inadequate. Further improving the US domestic public health infrastructure would be beneficial and cost effective regardless of whether an outbreak is intentional or natural. The devastating Ebola outbreaks serve as a call for urgent investment in public health infrastructures worldwide, to provide both responsive and proactive actions to deter bioterrorism and to deal with natural disease outbreaks. Public health remains a powerful and often underutilized asset for bioweapons defense through vulnerability reduction; leveraging public health may also enable new approaches to deterring bioterrorism threats. International security scholars would benefit from better understanding of and leveraging the knowledge of the public health community.

#### Extinction without early response

Farmer 17 (“Bioterrorism could kill more people than nuclear war, Bill Gates to warn world leaders” http://www.telegraph.co.uk/news/2017/02/17/biological-terrorism-could-kill-people-nuclear-attacks-bill/)

Bioterrorists could one day kill hundreds of millions of people in an attack more deadly than nuclear war, Bill Gates will warn world leaders. Rapid advances in genetic engineering have opened the door for small terrorism groups to tailor and easily turn biological viruses into weapons. A resulting disease pandemic is currently one of the most deadly threats faced by the world, he believes, yet governments are complacent about the scale of the risk. Speaking ahead of an address to the Munich Security Conference, the richest man in the world said that while governments are concerned with the proliferation of nuclear and chemical weapons, they are overlooking the threat of biological warfare. Mr Gates, whose charitable foundationis funding research into quickly spotting outbreaks and speeding up vaccine production, said the defence and security establishment “have not been following biology and I’m here to bring them a little bit of bad news”. Mr Gates will today (Saturday) tell an audience of international leaders and senior officers that the world’s next deadly pandemic “could originate on the computer screen of a terrorist”. He told the Telegraph: “Natural epidemics can be extremely large. Intentionally caused epidemics, bioterrorism, would be the largest of all. “With nuclear weapons, you’d think you would probably stop after killing 100million. Smallpox won’t stop. Because the population is naïve, and there are no real preparations. That, if it got out and spread, would be a larger number.” He said developments in genetic engineering were proceeding at a “mind-blowing rate”. Biological warfare ambitions once limited to a handful of nation states are now open to small groups with limited resources and skills. He said: “They make it much easier for a non-state person. It doesn’t take much biology expertise nowadays to assemble a smallpox virus. Biology is making it way easier to create these things.” The increasingly common use of gene editing technology would make it difficult to spot any potential terrorist conspiracy. Technologies which have made it easy to read DNA sequences and tinker with them to rewrite or tweak genes have many legitimate uses. He said: “It’s not like when someone says, ‘Hey I’d like some Plutonium’ and you start saying ‘Hmmm.. I wonder why he wants Plutonium?’” Mr Gates said the potential death toll from a disease outbreak could be higher than other threats such as climate change or nuclear war. He said: “This is like earthquakes, you should think in order of magnitudes. If you can kill 10 people that’s a one, 100 people that’s a two... Bioterrorism is the thing that can give you not just sixes, but sevens, eights and nines. “With nuclear war, once you have got a six, or a seven, or eight, you’d think it would probably stop. [With bioterrorism] it’s just unbounded if you are not there to stop the spread of it.” By tailoring the genes of a virus, it would be possible to manipulate its ability to spread and its ability to harm people. Mr Gates said one of the most potentially deadly outbreaks could involve the humble flu virus. It would be relatively easy to engineer a new flu strain combining qualities from varieties that spread like wildfire with varieties that were deadly. The last time that happened naturally was the 1918 Spanish Influenza pandemic, which went on to kill more than 50 million people – or nearly three times the death toll from the First World War. By comparison, the recent Ebola outbreak in West Africa which killed just over 11,000 was “a Richter Scale three, it’s a nothing,” he said. But despite the potential, the founder of Microsoft said that world leaders and their militaries could not see beyond the more recognised risks. He said: “Should the world be serious about this? It is somewhat serious about normal classic warfare and nuclear warfare, but today it is not very serious about bio-defence or natural epidemics.” He went on: “They do tend to say ‘How easy is it to get fissile material and how accurate are the plans out on the internet for dirty bombs, plutonium bombs and hydrogen bombs?’ “They have some people that do that. What I am suggesting is that the number of people that look at bio-defence is worth increasing.” Whether naturally occurring, or deliberately started, it is almost certain that a highly lethal global pandemic will occur within our lifetimes, he believes. But the good news for those contemplating the potential damage is that the same biotechnology can prevent epidemics spreading out of control. Mr Gates will say in his speech that most of the things needed to protect against a naturally occurring pandemic are the same things needed to prepare for an intentional biological attack. Nations must amass an arsenal of new weapons to fight such a disease outbreak, including vaccines, drugs and diagnostic techniques. Being able to develop a vaccine as soon as possible against a new outbreak is particularly important and could save huge numbers of lives, scientists working at his foundation believe.

## CP

#### TEXT: The attorney generals of 50 states and relevant territories, through the National Association of Attorneys General’s Multistate Antitrust Task Force, should increase prohibitions on anticompetitive business practices in agriculture, including input markets & consolidation.

#### A multistate AG antitrust enforcement solves the aff---causes federal follow-on

Artega 19 (Juan A. Arteaga is an experienced antitrust attorney and a former Deputy Assistant Attorney General for the U.S. Department of Justice’s Antitrust Division, The Role of US State Antitrust Enforcement, Global Competition Review, 11-19, <https://www.lexology.com/library/detail.aspx%3Fg%3Dd423301d-f4d1-4550-a99c-1880869e67e7+&cd=11&hl=en&ct=clnk&gl=us>, y2k)

In the United States, competition laws have been implemented and enforced through a dual system where the state and federal governments play distinct, yet complementary, roles in regulating the competitive process. While the Department of Justice (DOJ) Antitrust Division and Federal Trade Commission (FTC) are widely viewed as the stewards of US antitrust laws, state attorneys general have long played an important, albeit varying, role within the United States’ antitrust enforcement regime. This has been especially true during the past 30 years because state attorneys general have become much more effective at coordinating their antitrust enforcement efforts to ensure that they have a meaningful seat at the table in any actions brought jointly with their federal counterparts or are able to bring their own actions when the DOJ and FTC decide not to do so.Prior to the enactment of the first federal antitrust law – the Sherman Act – in 1890, state antitrust enforcement was quite robust in the United States because at least 26 states had already enacted some form of antitrust prohibition. In addition, state enforcers had often used general corporation law and common law restraint of trade principles to regulate anticompetitive business practices and transactions. This well-established state antitrust enforcement infrastructure – coupled with the fact that the Antitrust Division and FTC had only recently been created – permitted state attorneys general to continue playing a leading enforcement role for the first 30 years after the Sherman Act’s passage. Indeed, state attorneys general successfully prosecuted a number of the most consequential antitrust enforcement actions during this period. In the early 1920s, however, state antitrust enforcers began playing a less prominent role because ‘the national dimension of the most important trusts, . . . as well as their ability to restructure in order to evade problematic state laws’, made clear that the federal government needed to step forward in order to adequately protect consumers and the competitive process. As a result, the DOJ and FTC – whose national jurisdiction and greater resources enabled them to tackle the most pressing competition issues of the time – displaced state attorneys general as the primary source of government antitrust enforcement within the United States. This largely remained true until the mid-1970s when Congress, in response to the DOJ and FTC’s perceived inactivity, passed two laws that expanded the authority of state attorneys general to enforce the federal antitrust laws and provided them with financial resources to do so. In 1976, Congress passed the Hart-Scott-Rodino Antitrust Improvement Act, which, among other things, authorised state attorneys general to bring *parens patriae* suits (i.e., legal actions brought on behalf of natural persons residing within their states) seeking monetary (treble damages) and injunctive relief for Sherman Act violations. Congress also passed the Crime Control Act of 1976, which, among other things, provided state attorneys general with tens of millions in federal grants as ‘seed money’ for the creation of antitrust bureaus within their offices. These laws had their intended effect of reinvigorating state antitrust enforcement. During the 1980s, for example, state attorneys general once again emerged as vigorous antitrust enforcers, especially with respect to the prosecution of resale price maintenance practices and other vertical restraints. The rise in the level and prominence of state antitrust enforcement during this period was largely due to a perceived enforcement void at the federal level, where the DOJ and FTC had mostly limited their focus to ‘prohibiting cartels and large horizontal mergers’. No longer content with ceding antitrust enforcement to federal enforcers, state attorneys general expanded their antitrust dockets from prosecuting purely ‘local matters, such as bid-rigging on state contracts’, to actively investigating and litigating matters with multistate and national implications. To help ensure that they had a larger seat at the antitrust enforcement table, state attorneys general also increased the coordination of their enforcement efforts and competition advocacy through organisations such as the National Association of Attorneys General (NAAG), which created a Multistate Antitrust Task Force and issued state Vertical Restraints and Horizontal Merger Guidelines during this period. Since the reawakening of state antitrust enforcement nearly 30 years ago, state attorneys general have continued to play an important role in the enforcement of both state and federal antitrust laws. During periods of lax federal antitrust enforcement, state attorneys general have often ramped up their enforcement activity in order to protect consumers from anticompetitive transactions and business practices. During periods of vigorous federal antitrust enforcement, they have often served as strong partners for the DOJ and FTC by, among other things, offering valuable insights about competitive dynamics in local markets, assisting with obtaining information from key market participants (including state governmental entities that are direct purchasers of goods and services), and helping develop and implement litigation strategies for cases being tried before federal judges presiding in their states. Since January 2017, state attorneys general have increasingly played a leading and independent antitrust enforcement role. State antitrust enforcers have significantly increased their enforcement activity and willingness to act separately from their federal counterparts because many of them believe that there has been ‘under-enforcement’ by the DOJ and FTC. State antitrust enforcers have also been able to enhance their influence over key competition policy issues and the antitrust enforcement agenda within the United States because there appears to have been a significant decline in the coordination and relationship between the DOJ and FTC. In once again flexing their enforcement muscle, state attorneys general have shown a willingness to publicly disagree with the DOJ and FTC on both policy and enforcement decisions, and have also sought to pressure their federal counterparts into more aggressively policing certain industries. Recent examples of the increased independence and assertiveness of state antitrust enforcers include: In their joint investigation into the T-Mobile/Sprint merger, nearly 20 state attorneys general have sued to block the transaction even though the DOJ, along with seven state attorneys general, have approved the deal after securing certain structural and behavioural remedies. After the DOJ announced its proposed settlement with the companies, the Attorney General for New York, who has been leading the states’ challenge to the merger, issued a press release dismissing the adequacy of the remedies negotiated by the DOJ: ‘The promises made by [the divestiture buyer] and [the merging companies] in this deal are the kinds of promises only robust competition can guarantee. We have serious concerns that cobbling together this new fourth mobile [phone] player, with the government picking winners and losers, will not address the merger’s harm to consumers, workers, and innovation.’ The DOJ, FTC and several state attorneys general have been actively investigating and prosecuting ‘no-poach’ agreements (i.e., where competitors for employees agree not to recruit or hire each other’s employees)in recent years. However, the DOJ and state attorneys general have taken directly opposing positions in private litigation challenging the legality of ‘no-poach’ clauses in corporate franchise agreements. The DOJ has argued that courts should review these clauses under the rule of reason whereas various state attorneys general have argued that these clauses should be deemed per se unlawful. None of the more than 20 state attorney general offices that actively investigated the AT&T/Time Warner merger joined the DOJ’s unsuccessful challenge to the transaction despite the DOJ’s concerted effort to secure their support. In fact, nine state attorneys general filed an amicus brief opposing the DOJ’s appeal of the trial court’s decision. After the FTC declined to seek any Colorado-related remedies in connection with Optum’s acquisition of DaVita Medical Group, the Attorney General for Colorado required the merging companies to lift the exclusivity provisions in contracts with certain healthcare providers and to extend their existing contracts with certain health insurers. In announcing this settlement, the Colorado Attorney General stated: ‘I recognize that this case marks an important step in state antitrust enforcement . . . . I am committed to protecting all Coloradans from anticompetitive consolidation and practices, and will do so whether or not the federal government acts to protect Coloradans.’ After voicing displeasure with federal antitrust enforcement in the technology sector, numerous state attorneys general launched their independent investigations into ‘Big Tech’ companies even though the DOJ and FTC have ongoing investigations into these companies. Given that companies will increasingly have to engage with state attorneys general in a meaningful manner with respect to antitrust matters, this chapter discusses key issues related to state antitrust enforcement in the United States. Specifically, this chapter discusses: the federal and state antitrust laws under which state enforcers operate; the processes through which state enforcers coordinate with each other and their federal counterparts; the opportunity for coordination and conflict between state enforcers and private counsel during litigation; strategic and practical considerations when engaging with state attorneys general; and certain noteworthy enforcement actions that state enforcers have recently prosecuted. Statutory regime governing US state antitrust enforcement Civil enforcement of federal antitrust laws Enforcement actions on behalf of state governmental entities Under the federal antitrust laws, state attorneys general have the express authority to bring civil actions on behalf of their state, municipalities, and governmental entities for harm suffered when directly purchasing goods or services. In bringing such actions, state attorneys general can seek monetary (treble damages) and injunctive relief, as well as their costs and reasonable attorney’s fees. In actions seeking monetary relief, state attorneys general typically allege that the state plaintiffs were forced to pay higher prices by an unlawful horizontal conspiracy, such as a price-fixing or bid-rigging scheme, and seek to recover the overcharges. In some cases, state attorneys general have sought to recover damages arising out of anticompetitive unilateral conduct, such as overcharges paid by state governmental entities due to a defendant’s actual or attempted monopolisation of a specific market. In seeking injunctive relief, state attorneys general often argue that such relief is proper because the business practice or transaction in question – in addition to harming the state plaintiffs – has or will cause injury to the state’s general economy. While general harm to a state’s economy can serve as a basis for injunctive relief, stateattorneyscannot base their request for damages on such harm. Parens patriae enforcement actions A well-settled principle in the United States’ legal system is that ‘the States have a quasi sovereign interest in protecting their citizens from ongoing economic harm’. Consequently, the federal antitrust laws expressly authorise state attorneys general to file parens patriae actions in federal court that seek to redress the harm suffered by their citizens due to federal antitrust violations. In providing state attorneys general with parens patriae authority, the federal antitrust laws permit state antitrust enforcers to seek monetary (treble damages) and injunctive relief, as well as their costs and reasonable attorney’s fees. State attorneys general have been empowered to seek such broad and substantial relief on behalf of their citizens to allow them ‘to deter further economic harm and to obtain relief for the injury inflicted on their economies and their citizens’. In exercising their parens patriae authority, state attorneys general have often sought to protect their citizens and state economies from the harm caused by anticompetitive business practices. For example, in the e-Books Litigation, 33 state attorneys general alleged that Apple, Inc and various book publishers unlawfully conspired to fix the prices of electronic books, which resulted in their citizens paying higher prices and harm to their states’ general economies. Ultimately, these state attorneys general, working alongside private class counsel, secured settlements from the defendants that provided nearly US$600 million in direct refunds to their citizens. In a pending lawsuit brought against various manufacturers of generic pharmaceuticals, 44 state attorneys general have alleged that the defendants unlawfully conspired to fix the prices for numerous generic drugs, which forced their states and citizens to pay billions of dollars in overcharges, as well as significantly harmed their states’ general economies. State attorneys general have also invoked their parens patriae authority to protect their citizens and state economies from the harm caused by anticompetitive transactions. For instance, in their pending challenge to T-Mobile’s proposed acquisition of Sprint, nearly 20 state attorneys general have alleged that the transaction will result in their residents paying higher prices for lower quality mobile phone services as well as harm to their states’ general economies. Likewise, the state attorneys general that joined the DOJ’s successful challenges to the proposed Anthem/Cigna and Aetna/Humana mergers alleged that these mergers would have harmed their citizens and the general economies of their states by reducing the number of large health insurance providers from five to three. There are, however, important limitations on the parens patriae authority conferred to state attorneys general under the federal antitrust laws. For instance, the monetary relief sought by state attorneys general must: (1) arise out of a Sherman Act violation; (2) have been incurred by natural persons residing in their states (i.e., the losses suffered by business organisations cannot be included in the alleged damages); (3) exclude harm suffered by indirect purchasers of the goods and/or services in question; (4) avoid the risk of multiple recoveries by excluding amounts previously awarded for the same injuries; and (5) arise out of actual financial losses rather than general harm to their state’s economy. Moreover, state attorneys general must provide their residents with adequate notice of the lawsuit and a meaningful opportunity to opt out of the litigation. In seeking to prove the monetary harm suffered by their citizens, state attorneys general can employ many of the same methods utilised by private plaintiffs. In price-fixing cases, for example, state attorneys general can prove the claimed aggregate damages by utilising ‘statistical or sampling methods’, ‘comput[ing[ [the] illegal overcharges’, or relying on any other methodology deemed ‘reasonable’ by the court. In addition, a number of state antitrust laws authorise their state attorney general to hire private lawyers to handle parens patriae actions, which the state attorneys general challenging the T-Mobile/Sprint merger have done. Civil enforcement of state antitrust lawsMost states have enacted state antitrust laws that are comparable to Sections 1 and 2 of the Sherman Act. In addition, some states have passed antitrust laws that are similar to Sections 3 and 7 of the Clayton Act and the Robinson-Patman Act. These state antitrust laws typically contain provisions expressly requiring that ‘they be construed in conformity with comparable [f]ederal antitrust statutes’.

State antitrust statutes typically provide state attorneys general with broad authority to investigate possible violations, including the power to ‘issue civil investigative demands compelling oral testimony, the production of documents, and responses to written interrogatories to individuals and corporations’. Like the federal antitrust laws, most state antitrust laws authorise state attorneys general to file civil lawsuits on behalf of their states and state governmental entities whenever a violation has caused them to suffer harm in their capacity as direct purchasers of goods or services, as well as parens patriae actions on behalf of their citizens.

## 1AC (S) card CP

#### Text: The United States Federal Government should pass a 50-year farm bill that:

#### reduces acreage of annual grain crops from 70 percent to 10 percent or less of all cropland;

#### scales up perennial crops to 80 percent of farmland;

#### allocates the remaining 10 percent of cropland to other crops including locally produced vegetables and fruits.

#### CP Solves the whole aff – transitions to small farms and sustainable farming practices—esu reads yellow

Matthew R. 1ac Sanderson 21, a social scientist at Kansas State University, Stan Cox, a research scholar in ecosphere studies at The Land Institute, 5-17-2021, "Big Agriculture Is Leading to Ecological Collapse," Foreign Policy, <https://foreignpolicy.com/2021/05/17/big-industrialized-agriculture-climate-change-earth-systems-ecological-collapse-policy/> (ermo/sms Acc 9-10-2021)

Today, there is more carbon dioxide in the atmosphere than at any point “Big agriculture is best” cannot be an argument supported by empirical evidence. By now, it is vitally clear that Earth systems—the atmosphere, oceans, soils, and biosphere—are in various phases of collapse, putting nearly one-half of the world’s gross domestic product at risk and undermining the planet’s ability to support life. And big, industrialized agriculture—promoted by U.S. foreign and domestic policy—lies at the heart of the multiple connected crises we are confronting as a species. The litany of industrial agriculture’s toll is long and diverse. Consider the effects of industrial animal agriculture, for example. As of this writing, animal agriculture accounts for 14.5 percent of total anthropogenic greenhouse gas emissions annually. It is also the source of 60 percent of all nitrous oxide and 50 percent of all methane emissions, which have 36 times and 298 times, respectively, the warming potential of carbon dioxide. As industrial animal agriculture has scaled up, agricultural emissions of methane and nitrous oxide have been going in one direction only: up. Efforts to scale industrial agriculture are undermining the planet’s capacity to support life at more local scales too. Consider Brazil, home to the Amazon Rainforest, which makes up 40 percent of all remaining rainforest and 25 percent of all terrestrial biodiversity on Earth. Forest loss and species extinctions have only increased as industrial agriculture has scaled up in Brazil. Farmers are burning unprecedented amounts of forest to expand their operations in pursuit of an industrial model. In August 2019, smoke blocked the sun in São Paulo, Brazil, 2,000 miles away from the fires in the state of Amazonas. In India, the pace of agricultural industrialization is hastening as indicated by rising agricultural production and declining employment in agriculture, which now accounts for less than one-half of India’s workforce. Agriculture has been scaled with all the tools of the Green Revolution: a high-input farming system comprised of genetically modified seeds and accompanying synthetic fertilizers and pesticides. As agriculture has industrialized in India, the use of pesticides and fertilizers has risen as well. Although it has become more difficult to breathe the air in Brazil, it has become harder to find clean freshwater in India, where pesticide contamination is rising. There, the costs of the industrial agriculture model are plainly ecological and human: Unable to drink the water or pay back the loans they took out to finance their transition to industrial farming, an alarming number of Indian farmers are drinking pesticides instead. Almost a quarter-million Indian farmers have died by suicide since 2000, and 10,281 farmers and farm laborers killed themselves in 2019 alone. In Punjab, the country’s breadbasket, environmental destruction coexists with a raging opioid epidemic ensnaring nearly two-thirds of households in the state. If the events in Brazil and India sound familiar to U.S. readers, it is because there are analogous stories in the United States—where industrial agriculture is rendering entire landscapes uninhabitable. The U.S. Corn Belt, which spans the region from Ohio to Nebraska, produces 75 percent of the country’s corn, but around 35 percent of the region has completely lost its topsoil. Industrial agriculture has been pursued with special zeal in Iowa, where there are 25 million hogs and 3 million people. There, water from the Raccoon River enters the state capital of Des Moines—home to 550,000 people—with nitrates, phosphorus, and bacteria that have exceeded federal safe water drinking standards. At a larger scale, nutrient runoff from industrial agriculture in the U.S. Midwest has created an annual dead zone—a hypoxic area low in or devoid of oxygen—that is the size of Massachusetts. The ecological consequences of industrial agriculture manifest alongside a growing human toll. Rural communities are experiencing rising suicide rates, especially among young people, along with increases in “deaths of despair” from alcohol and drugs—an expanding human dead zone. Although tragic, these outcomes are neither inevitable nor natural. They are outcomes of U.S. policy choices. Industrialized agriculture has been a hallmark of U.S. foreign policy in the post-World War II era. Under the guise of development for all and the mantra of “feed the world,” the United States has used policy to dump surplus grain in low-income countries—undermining markets for smallholder farmers—and cultivate foreign markets as importers of high-input, industrial agriculture technologies to scale agriculture. At home, federal policy since the 1970s has explicitly promoted scaling industrial agriculture through the “get big or get out” imperative. Society did not arrive at this precipice because agriculture was too small or because industrialized agriculture respected the laws of physics. Instead, we are peering into an abyss of systemic socioecological collapse because every effort has been made to use industrialization to break through all known ecological and human limitations to scaling agriculture. Industrial agriculture simplifies ecosystems, rendering us more vulnerable to threats. Transformative policies will be required to pull us back from the edge. As a start, the United States could set an example for the Global North with a 50-year farm bill. The bill would promote ecosystem diversification and increased resilience by reducing acreage of annual grain crops from 70 percent to 10 percent or less of all cropland while scaling up perennial crops to 80 percent of farmland. The remaining 10 percent would be allocated to other crops, including a diverse array of locally produced vegetables and fruits. Soil and water-conserving perennial varieties of rice, wheat, legumes, and other food-grain crops—which are now being developed—could serve as components of diverse, perennial, multispecies communities of food crops that replicate how nature functions. The bill would promote a transition to smaller, more diverse farm operations as agricultural diversification will work most effectively not on vast, uniform acreages but as mosaics made up of many modest-sized farms. The bill would be an important step toward returning home as a species that once again lives within context—within limits, perennially. Our collective pursuit of “big is best” led us out of context to our peril. In the face of multiple cascading socioecological crises, Candide, published by the French writer Voltaire in 1759, shows us a way forward. Candide, the book’s protagonist, is mentored by Pangloss, a professor who holds a Leibnizian optimism about the world that justifies the status quo as being “all for the best” in the “best of all possible worlds.” At the end of Candide and Pangloss’s travels, which laid all forms of disaster on them, the two encounter an old farmer who is casually taking in the fresh air at his home. The farmer invites them into his house, where they eat and drink well. “You must have a vast and magnificent estate,” Candide said to the farmer. “I have only twenty acres,” replied the farmer. “I and my children cultivate them; our labor preserves us from three great evils—weariness, vice, and want.” Candide and the professor return to a small farm, and when the professor begins to philosophize again about how “all is for the best” in the “best of all possible worlds,” Candide responds, “All that is very well, but let us cultivate our garden.” As Candide stresses, it is vital to move away from abstract, monocultural arguments proposing business-as-usual as the best practice for all toward more practical work in more locally attuned, diversified agricultures that respect limits—both ecological and human. It is time to scale down agriculture and enhance our resilience to coming disruptions. The transitions will not be easy. We do not yet live in the best of all worlds, but things can be otherwise than as they are. We will need new agricultures and new policies to support them abroad and at home. Let us cultivate our gardens.

# On

## Industrial Ag

#### No phosphorus shortages—enough for 100s of years

Bennett 20 [CHRIS BENNETT, "Phosphorus Time Bomb for Agriculture? Myth and Reality", 8/25/20, https://www.agweb.com/news/crops/crop-production/phosphorus-time-bomb-agriculture-myth-and-reality]

Whether a question of Peak Oil or Peak Phosphorus, “Peak” debates revolve around a simplified, general premise: After half the supply of a given resource is gone, the remainder produces an economic melee. The advent of fracking booted Peak Oil proponents off center stage, and Peak Phosphorus advocates (most visibly financier Jeremy Grantham) have been countered by the International Fertilizer Development Center’s (IFDC) report and estimate of plentiful rock phosphate reserves capable of producing fertilizer for the next several hundred years. Stephen Jasinski, USGS mineral commodity specialist, calls the reaction to Peak Phosphorus, “exaggerated,” and says, “There are no imminent shortages of phosphate rock. Media coverage seems to have slowed down over the past several years.” Jasinski also describes global supply: “World consumption of marketable phosphate rock was about 240 million metric tons in 2019. U.S. consumption of phosphate rock in 2019 was about 25 million metric tons. World reserves are about 69 billion metric tons. World resources are about 300 billion tons.” Further, a USGS Mineral Commodity Summary (January 2020) prepared by Jasinski is blunt: “There are no imminent shortages of phosphate rock.” Significantly, the Summary’s concluding text is equally blunt: “There are no substitutes for phosphorus in agriculture.”

#### Dead zones are inevitable, not caused by ag runoff, and have no impact

Dennis Avery 5, Director of Global Food Issues at the Hudson Institute, “It’s Time To Tell The World How High-Yield Farming Saves Nature”, 2/9/2005, http://www.cgfi.org/tag/farm-productivity/

During the Clinton Administration, a White House Task Force recommended a 30 percent cut in Midwest fertilizer use because of a so-called “dead zone” in the Gulf of Mexico. Fortunately, the task force admitted in its report that it could find no evidence of either ecological or economic harm to the Gulf from the summer algae bloom that causes the “dead zone.” The first reports of such algae blooms in the Gulf go back into the 19th century. Fisheries experts say that most of the nutrients for the Gulf’s vast, rich fishery come down the Mississippi River. Such hypoxic zones are a common feature at the mouths of 40 major rivers around the world, where fresh, nutrient-laden water hits salt water. Under such conditions, the laws of biology and physics guarantee periodic algae blooms. Know also that Midwest fertilizer use has not risen since 1980, while the yields from the corn that gets most of the N fertilizer have risen 25 percent. Obviously, more of the farm fertilizer is being harvested as corn. More of the Midwest’s poultry and livestock have been moved indoors, where their wastes are carefully collected and spread on growing crops. If the “dead zone” is expanding, which is in serious doubt, where is the additional N coming from? The sewage treatment plants of St. Louis and Kansas City? Don’t forget either, that before farmers settled the Great Plains, the grasslands there had 60 million bison, 100 million antelope, billions of birds and grasshoppers, all eating the grass and defecating. The N may have taken longer to reach the Gulf, but it’s likely that Cortez could have found an algal bloom in the Gulf of Mexico when he invaded Mexico in 1520.

#### No impact to bio-d loss

Kareiva 12 (Peter Kareiva et. al, – Chief Scientist and Vice President of the Nature Conservancy, Michelle Marvier, Robert Lalasz, “Conservation in the Anthropocene Beyond Solitude and Fragility”, The Breakthrough, http://thebreakthrough.org/index.php/journal/past-issues/issue-2/conservation-in-the-anthropocene/)

As conservation became a global enterprise in the 1970s and 1980s, the movement's justification for saving nature shifted from spiritual and aesthetic values to focus on biodiversity. Nature was described as primeval, fragile, and at risk of collapse from too much human use and abuse. And indeed, there are consequences when humans convert landscapes for mining, logging, intensive agriculture, and urban development and when key species or ecosystems are lost.

But ecologists and conservationists have grossly overstated the fragility of nature, frequently arguing that once an ecosystem is altered, it is gone forever. Some ecologists suggest that if a single species is lost, a whole ecosystem will be in danger of collapse, and that if too much biodiversity is lost, spaceship Earth will start to come apart. Everything, from the expansion of agriculture to rainforest destruction to changing waterways, has been painted as a threat to the delicate inner-workings of our planetary ecosystem.

The fragility trope dates back, at least, to Rachel Carson, who wrote plaintively in Silent Spring of the delicate web of life and warned that perturbing the intricate balance of nature could have disastrous consequences.22 Al Gore made a similar argument in his 1992 book, Earth in the Balance.23 And the 2005 Millennium Ecosystem Assessment warned darkly that, while the expansion of agriculture and other forms of development have been overwhelmingly positive for the world's poor, ecosystem degradation was simultaneously putting systems in jeopardy of collapse.24

The trouble for conservation is that the data simply do not support the idea of a fragile nature at risk of collapse. Ecologists now know that the disappearance of one species **does not** necessarily lead to the extinction of any others, much less all others in the same ecosystem. In many circumstances, the demise of formerly abundant species can be inconsequential to ecosystem function. The American chestnut, once a dominant tree in eastern North America, has been extinguished by a foreign disease, yet the forest ecosystem is surprisingly unaffected. The passenger pigeon, once so abundant that its flocks darkened the sky, went extinct, along with countless other species from the Steller's sea cow to the dodo, with no catastrophic or even measurable effects.

These stories of resilience are not isolated examples -- a thorough review of the scientific literature identified 240 studies of ecosystems following major disturbances such as deforestation, mining, oil spills, and other types  of pollution. The abundance of plant and animal species as well as other measures of ecosystem function recovered, at least partially, in 173 (72 percent) of these studies.25

While global forest cover is continuing to decline, it is rising in the Northern Hemisphere, where "nature" is returning to former agricultural lands.26 Something similar is likely to occur in the Southern Hemisphere, after poor countries achieve a similar level of economic development. A 2010 report concluded that rainforests that have grown back over abandoned agricultural land had 40 to 70 percent of the species of the original forests.27 Even Indonesian orangutans, which were widely thought to be able to survive only in pristine forests, have been found in surprising numbers in oil palm plantations and degraded lands.28

Nature is so resilient that it can recover rapidly from even the most powerful human disturbances. Around the Chernobyl nuclear facility, which melted down in 1986, wildlife is thriving, despite the high levels of radiation.29 In the Bikini Atoll, the site of multiple nuclear bomb tests, including the 1954 hydrogen bomb test that boiled the water in the area, the number of coral species has actually increased relative to before the explosions.30 More recently, the massive 2010 oil spill in the Gulf of Mexico was degraded and consumed by bacteria at a remarkably fast rate.31

Today, coyotes roam downtown Chicago, and peregrine falcons astonish San Franciscans as they sweep down skyscraper canyons to pick off pigeons for their next meal. As we destroy habitats, we create new ones: in the southwestern United States a rare and federally listed salamander species seems specialized to live in cattle tanks -- to date, it has been found in no other habitat.32 Books have been written about the collapse of cod in the Georges Bank, yet recent trawl data show the biomass of cod has recovered to precollapse levels.33 It's doubtful that books will be written about this cod recovery since it does not play well  to an audience somehow addicted to stories of collapse and environmental apocalypse.

Even that classic symbol of fragility -- the polar bear, seemingly stranded on a melting ice block -- may have a good chance of surviving global warming if the changing environment continues to increase the populations and northern ranges of harbor seals and harp seals. Polar bears evolved from brown bears 200,000 years ago during a cooling period in Earth's history, developing a highly specialized carnivorous diet focused on seals. Thus, the fate of polar bears depends on two opposing trends -- the decline of sea ice and the potential increase of energy-rich prey. The history of life on Earth is of species evolving to take advantage of new environments only to be at risk when the environment changes again.

The wilderness ideal presupposes that there are parts of the world untouched by humankind, but today it is impossible to find a place on Earth that is unmarked by human activity. The truth is humans have been impacting their natural environment for centuries. The wilderness so beloved by conservationists -- places "untrammeled by man"34 -- never existed, at least not in the last thousand years, and arguably even longer.

#### Monoculture declining now

Neil C. Hansen 12 Associate Professor of Soil Science at Colorado State University with specialization in soil and water conservation in both dryland and irrigated crop production systems. “Research achievements and adoption of no-till, dryland cropping in the semi-arid U.S. Great Plains” Field Crops Research Volume 132, 14 June 2012, Pages 196–203

The semiarid U.S. Great Plains are a major production region for dryland wheat, with spring wheat as the dominant crop in the northern region and winter wheat in the central and southern regions. The traditional production system is a wheat–summer fallow rotation with conventional or stubble mulch tillage. No-till systems are being adopted together with more intensive crop rotations that reduce fallow frequency, increase precipitation use efficiency, reduce erosion, and improve soil properties. No-till adoption is greatest in the northern region of the Great Plains, where climate conditions are favorable for intensified, no-till crop rotations. Greater than 25% of cultivated land in the northern Great Plains is managed with no-till and adoption continues to increase. Inclusion of oilseed crops in continuous crop rotations without fallow is common. In the central Great Plains, about 20% of cultivated land is managed with no-till systems. In this area, no-till is generally associated with a 3-year rotation of winter wheat–summer crop–summer fallow (typical summer crops are maize, sorghum, sunflower, proso millet). There is much less adoption of no-till in the southern Great Plains, where production levels often fail to produce adequate crop residue to realize the benefits of no-till. In this region, tillage is often used to alleviate compaction from livestock grazing or to roughen the surface as a protection against wind erosion. However, some producers are adopting no-till systems and research suggests that potential crop yield advantages for no-till in the southern Great Plains may be of greater economic value than the value currently gained by grazing in the tilled systems. A major decision for dryland farmers in the Great Plains is whether to fallow or plant a crop. Research has evaluated relationships between stored soil moisture levels at the time of planting and the resulting crop yield as a tool to assist farmers with this decision. The relationships are useful, but they are best for crops with relatively short growing seasons. On-going research seeks to couple long-range weather forecasting with soil moisture assessments to improve the predicted yield potential for other crops. Alternative no-till crops and crop rotations are being evaluated for the potential to increase precipitation use efficiency, improve soil properties, reduced dependence on N fertilizers, adapt to climate change, and for develop alternative markets. Inclusion of pulses as green manures is of interest, but the potential benefits of these crops must be weighed together with the use of already limited water resources. Inclusion of annual forage crops can improve precipitation use efficiency and resilience to climate change in the Great Plains and these crops may help meet emerging markets for biomass based renewable energy. Sustaining crop production in the Great Plains is highly dependent on reducing soil erosion, maintaining soil organic matter, and economic profitability.

#### Monocultures are stable and sustainable

Tim Durham 20, Associate Professor at Ferrum College, Degree in Plant Medicine, Operator of Deer Run Farm, “Perspective: Why Monocultures are a Deceptively Simple Solution in Agriculture”, Ag Daily, 4/29/2020, https://www.agdaily.com/crops/row-crop-redemption/

It’s a humble, if one-sided goal. But what’s often in the crosshairs of activists is the philosophy of the planting system — the “dreaded” monoculture. Row crops are a relic, say self-styled pundits in the sustainability debate. Indian activist Vandana Shiva touts her surreally titled book “Monocultures of the Mind,” defying the prevailing mindset and conformity of row crops. In the closing segment of the BBC’s acclaimed Reith Lecture Series, Prince Charles agreed, proposing that we work “with the grain of nature” and follow the “genius of nature’s clearly defined boundaries.” After straying too far from nature’s bosom, they say it’s time to square up with polyculture, a mosaic inspired by the rainforest. What does this mean? Grow multiple crops in a shared space. Shun that one-dimensional simplification for a more intricate ecosystem. The selling points are perennial stability, productivity, and built-in checks and balances that keep pests and diseases at bay. Certainly sounds appealing. In their view, it’s naive to think something so elegantly simple can sustainably provide. If monoculture is a 100 level basket-weaving class for unambitious and shortsighted, polyculture is an all-out doctoral dissertation for the studious and eco-aligned. Seems like a Rube Goldberg complex though — insufferable complexity just for the sake of it. Ironically, nature’s model is best suited to provide food and fiber — only salvation isn’t the miracle system the Prince is peddling. Though no farm can ever hope (nor should they want to) faithfully replicate a wild ecosystem, current methods seem to be well grounded. In fact, researcher David Wood thinks Mother Nature would be flattered at the lengths we’ll go to mimic her. Questioning the theory that cereals (not the milk in a bowl kind, at least not directly!) first arose as weeds on the outskirts of human settlements, Wood found that they exist today as vast monocultures along ancient waterways. Frequent floods would flush these stands with nutrient rich sediment; much in the same way a farmer spreads fertilizer in the field. For centuries, wild rice was widely harvested as a staple crop from southern Sudan to the Atlantic. Wood suggests that early farmers had a working knowledge of this system and adapted it, realizing the precedents set in nature’s fields. Even though wet rice has been sustained on the same land for millennia, Miguel Altieri of UC-Berkeley claims that monocultures are inherently unstable because they “provide optimal conditions for the unhampered growth of weeds, insects, and diseases because ecological niches are not filled by other organisms.” The alternative is to model our ambitions on the rainforest. Hosting perhaps 25 million of the Earth’s 30 million wild species, it remains a hotspot of biodiversity. With limited resources, organisms effectively keep the peace by filling the least intrusive niches and avoiding competition at all costs. Skirmishes for resources are just too costly. Though productivity (in terms of sheer plant biomass) remains high, few of those gains are edible or of economic value to a farmer. Indeed, the rainforest’s treasure trove of life is largely a last ditch effort to survive. Suggesting such a model for food production is counterintuitive. Blistering heat robs the soil of nutrients and tilth, and yields suffer. In the Amazon, growers are resigned to slash and burn, while U.S. farmers still tend the land that their forefathers cleared centuries before. They didn’t know it, but early pioneers extended the historical reign of monodominance by selecting the best land, leaving the marginal areas (which host a much broader spectrum of life) as a last resort. This is the polyculture (and often by association, organic) paradox. It’s also a textbook case in ecology. When resources are plentiful, a few species dominate. Opportunists need not be pests, as Altieri claims. Nobel Laureate Norman Borlaug capitalized on this principle to develop high-yielding wheat strains responsive to fertilizer and other inputs. In the process he saved a billion lives and 12 million square miles of wildlife habitat. The Green Revolution taught us that the key to averting human misery and wildlife loss is properly pairing land with practice. We can be intentional by conscripting the “best” land (which tends to trend monodominant anyway), and spare the rich biodiversity in poor(er) real estate. This land sparing ensures maximum productivity on the smallest footprint, sustaining us and leaving more land for nature. Far from failing the eco-palatability taste test, the take home message is to embrace a monoculture in both mind and practice — using nature’s forgotten fields as inspiration. Farmers can (and should) still leverage crop rotation and fallowing to keep pests and pathogens from building to intolerable levels. No one is suggesting they grow the same crop year in, year out, in the same space. That’s the definition of insanity — not monoculture. Turns out the deceptively simple monoculture playbook has been right all along. As an eco-foray in conservation, food security, and social justice, polyculture is a recurring fad that’s doomed to fail.

## Acceleration

#### The mooney evidence says that mergers of dow, Deupont and Monsanto baer have already created the companies that will geo engineer, they don’t require divestiture, which means they cant break them up and cant solve.

#### No ABR impact

Jesse Pines 10, Professor, Emergency Medicine and Health Policy, George Washington University, “Should We Be Afraid of the Superbug?” FOREIGN POLICY, 9/3, www.foreignpolicy.com/articles/2010/09/03/should\_we\_be\_afraid\_of\_the\_superbug, accessed 9-14-14.

For a few days this August, much of the news media in the West became convinced that we were headed back to the 1800s, medically speaking. A study in the September 2010 issue of British medical journal the Lancet argued that bacteria carrying genes for NDM-1, a gene that imparts resistance to a key family of antibiotics, had made their way through India and Pakistan into Britain and were now threatening to derail medical treatment across the developed world. Linked with the always shady-sounding concept of "medical tourism" -- the practice of traveling to other countries for budget surgery -- the so-called "superbug," able to breed vicious and deadly infections, became an instant media panic during a slow news month. The Drudge Report and Andrew Breitbart's news website both featured it. A Guardian science columnist wrote, "Now, the post-antibiotic apocalypse is in sight."¶ Er, not so much. As with most August stories, the reality of superbugs is a bit more complex than the media has portrayed it. Yes, antibiotic-resistant bacteria are a threat, as this week's news of an outbreak among premature infants in London reminds us. But no one yet knows how bad NDM-1-related infections could be. Not only is it far too early to say we're headed for apocalypse, we've also got a lot to learn from superbugs -- namely, how our own over-use of antibiotics is making it more likely that a superbug of the future could live up to this summer's hype.¶ Alexander Fleming discovered the first antibiotic by accident in 1928, when he left out a bacterial culture for a month while on vacation and came back to find that some of the bacteria had been killed by a fungus named Penicillium. By the early 1940s, a commercial product, penicillin, was mass-produced to cure bacterial infections in humans, and medical practice hasn't been the same since.¶ These days, antibiotics are a major weapon in medicine's war on disease, used to treat everything from life-threatening infections like meningitis to more run-of-the-mill ear infections. For more advanced medical technologies, like chemotherapy or organ transplantation, antibiotics are needed to prevent and treat infections while patients heal. Neither treatment would be possible without antibiotics.¶ At this point, in fact, antibiotics are suffering from their own success. They are so engrained in the medical and social culture that over-prescription is a major problem. Recent surveys have found that 70 to 80 percent of doctors' visits for sinus infections result in an antibiotic prescription. But most sinus infections are caused by viruses, and antibiotics don't cure viral infections.¶ The medical sin of antibiotic overuse goes beyond mere ineffectiveness -- it actually can be harmful. Here's how it works: Bacteria are everywhere on our bodies, even when we are not sick. When we take antibiotics for a bacterial infection, they only kill certain bacteria (usually the ones making us sick). Then, as the body gets better, the surviving bacteria multiply and take over. Now and then a few remaining bacteria carry special resistance to antibiotics -- which is what kept them alive in the first place. With the other bacteria out of the way, the resistant bacteria (i.e., the superbug) can multiply and sometimes cause problems. For example, if one of those superbugs causes an infection, some antibiotics won't work anymore, and then you have an infection that is more difficult to treat.¶ One of the prototypical superbugs caused by antibiotic use (and overuse) is Methicillin-Resistant Staphylococcus aureus (MRSA). MRSA is resistant to many antibiotics, including penicillin, and causes a variety of problems in humans: mostly skin infections, but also more invasive diseases like pneumonia and bloodstream infections.¶ Another superbug that's been around for a while but has also taken a recent media tour is Clostridium difficile (C. diff), which can be spread when antibiotics wipe out normal intestinal bacteria that keep C. diff in check. A recent study found C. diff infection occurred in 13 out of every 1,000 hospitalizations. C. diff causes diarrhea, and in some cases a particularly severe and sometimes lethal infection of the colon.¶ Looking at bacteria carrying the NDM-1 gene, C. diff, and MRSA, it's not surprising that people would panic over the possibility of these or other, even more resistant, bugs of the future making our advances in antibiotics worthless. And it's a legitimate fear. Although there are antibiotics and other treatments that work against all known superbugs, bacteria will continue to evolve, developing stronger antibiotic resistance in the future. It is conceivable that bacteria will someday outsmart our best medical technologies.¶ But it is unlikely that it will happen any time soon. One reason is that there are many different classes of antibiotics, so while some don't work against superbugs, there are usually others that do. Antibiotics that have been shelved for years might even be re-introduced to fight superbugs, though obviously this would be less than ideal because of higher risk of side effects. A better and more likely solution is for drug companies and other scientists to discover new classes of antibiotics. The financial incentives for heading off a true superbug-led medical catastrophe would be huge -- something that always drives medical innovation quite nicely, as it did with treatments for HIV in the 1990s.

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#### No climate impact---bad studies and we’ll adapt

Nils P. Gleditsch 21, Research Professor at the Peace Research Institute Oslo, “This time is different! Or is it? NeoMalthusians and environmental optimists in the age of climate change,” Journal of Peace Research, pg. 5-6, 2021, SAGE. clarification denoted with brackets.

The most extreme contrarian position is, of course, to deny one or both key conclusions of the IPCC: the reality of global warming or the human contribution to it. However, most environmental optimists accept these two key conclusions but raise other problems with the panel’s discussion of the social effects of climate change and even more so with popular interpretations of the panel reports. For instance, Hausfather & Peters (2020), by no means ‘climate deniers’, decry the common use of choosing the high-risk [scenario] RCP8.59 to illustrate ‘business as usual’ as misleading. The causal chains from climate change to the proposed effects on human beings are long and complex, and the uncertainty increases every step of the way. In the literature on the social effects of climate change, including the IPCC reports, statements abound that something ‘may’ lead to something else, or that a variable ‘is sensitive to’ another, without any guidelines for how to translate this into probabilities (Gleditsch & Nordås, 2014: 87f). Uncritical use of the precautionary principle, where any remotely possible calamity unwittingly becomes a probable event, is not helpful. Gleditsch & Nordås (2014: 85) note that while AR5 (IPCC, 2014) did not find strong evidence for a direct link between climate change and conflict, it argued that climate change is likely to impact known conflict-inducing factors like poverty and inconsistent political institutions and therefore might have an indirect effect on conflict. But this assumes that correlations are transitive, which is not generally the case. If A correlates with B and B with C, we know nothing about how A relates to C unless both correlations are extremely high. The strongest case for the climate–conflict link is the effect of interaction between climate change and factors like poverty, state failure, or ethnic polarization. It may be more cost-effective to try to deal with these other risk factors than with global warming itself if the goal is to reduce the ‘risk multiplier’ effect of climate change on armed conflict. The articles in this special issue do not generally see scarcity by itself as necessarily resulting in strongly negative outcomes. Factors like development, state failure, and previous overload on ecosystems continue to play an important role in that they interact with climate change to produce conflict and other social outcomes. For instance, Ide, Kristensen & Bartusevicˆius (2021) conclude that the impact of floods on political conflict are contingent on other factors such as population size and regime type. Moreover, most of the articles do not assume that scarcities are likely to arise at the global level. They may be regional (mostly in Africa), national, or local. Urban and rural areas may be affected by different scarcities. Climate change may also affect particularly strongly groups that are already at an economic or political disadvantage. The effects can be alleviated and adaptations constructed at these levels. The argument about how climate change may indirectly impact conflict leans heavily on the negative economic consequences of climate change, but with little or no reference to the research that explicitly deals with this topic. In fact, the relevant chapter in AR5 concluded that for most sectors of the economy, the impact of climate change was likely to be dwarfed by other factors. Tol (2018) finds that the long-term global economic effects are likely to be negative, but that a century of climate change will have about the same impact on the economy as the loss of one year of economic growth. Other economists are more cautious, but the dean of climate change economics, William Nordhaus (2018: 345, 359), estimates that ‘damages are 2.1 percent of global income at 3C warming and 8.5 percent of income at 6C’, while also warning that the longer the delay in taking decisive action, the harsher the necessary countermeasures. Stern (2006) is more pessimistic, based mainly on a lower discount rate (the interest rate used to calculate the present value of future cash flows) as are Wagner & Weitzman (2015). Heal (2017) argues that the Integrated Assessment Models generally used in the assessment of the economics of climate change are not accurate enough to provide quantitative insights and should not be taken as serious forecasts. Yet, all these economists take the basically optimistic view that climate change is manageable with appropriate policies for raising the price on the emission of greenhouse gases. With a chapter heading from Wagner & Weitzman (2015: 17): ‘We can do this’. This more optimistic assessment of climate change does not assume that the challenge will go away by itself or can be left to the market. A plausible approach, favored by most economists,10 is the imposition of a robust and increasing price on carbon emissions (whether as a carbon tax or through a cap and trade scheme) high enough to reduce the use of fossil fuels and encourage the search for their replacement. More than 25 countries had such taxes by early 2018 (Metcalf, 2019), but generally not at a level seen as necessary for limiting global warming to, say, 2C. This approach relies on the use of the market mechanism, but with targets fixed by public policy. Income from a carbon tax can be channeled back to the citizens to avoid increasing overall taxation. To speed up the transition, funds can also be allocated to the research and development of cheaper and more efficient production of various forms of fossil-free energy, including nuclear power (Goldstein & Qvist, 2019). The response of the environmental optimists continues to emphasize the role of innovations; technological innovations, such as improvements in battery technology, the key element in the 2019 Nobel Prize in chemistry,11 but also social innovations, as exemplified by the experimental approach to the alleviation of poverty, rewarded in the same year by the Nobel Prize in economics.12 While the most important countermeasures will be directed at the mitigation of climate change, there is also a strong case for adaptation. If sea-level rise cannot be totally prevented, dikes and flood barriers will be cost-effective and necessary, at least in high-value urban areas. If parts of Africa suffer from drought, there will be increased use for new crops that are more suitable for a dry climate, possibly developed in part by GMO technology. Industrialization in Africa can decrease the one-sided reliance on rain-fed agriculture, as it has in other parts of the world, which have moved human resources from the primary sector to industry (and then to services). Continuing urbanization will move millions out of the most vulnerable communities (Collier, 2010). While structural change failed to produce economic growth in Latin America and Africa after 1990, Africa has experienced a turnaround in the new millennium (McMillan & Rodrik, 2014) and there are also potentials for increasing productivity by structural change within agriculture in Africa (McCullough, 2017).

#### No tipping points or impact for 100 years

Matt Ridley 15, DPhil in Zoology from Oxford, Member of the Science and Technology Select Committee in the House of Lords of the UK, Fellow of the Royal Society of Literature and of the Academy of Medical Sciences, and Foreign Honorary Member of the American Academy of Arts and Sciences. He is honorary president of the International Centre for Life in Newcastle, “Climate Change Will Not Be Dangerous for a Long Time”, Scientific American, http://www.scientificamerican.com/article/climate-change-will-not-be-dangerous-for-a-long-time/

The climate change debate has been polarized into a simple dichotomy. Either global warming is “real, man-made and dangerous,” as Pres. Barack Obama thinks, or it’s a “hoax,” as Oklahoma Sen. James Inhofe thinks. But there is a third possibility: that it is real, man-made and not dangerous, at least not for a long time. This “lukewarm” option has been boosted by recent climate research, and if it is right, current policies may do more harm than good. For example, the Food and Agriculture Organization of the United Nations and other bodies agree that the rush to grow biofuels, justified as a decarbonization measure, has raised food prices and contributed to rainforest destruction. Since 2013 aid agencies such as the U.S. Overseas Private Investment Corporation, the World Bank and the European Investment Bank have restricted funding for building fossil-fuel plants in Asia and Africa; that has slowed progress in bringing electricity to the one billion people who live without it and the four million who die each year from the effects of cooking over wood fires. In 1990 the Intergovernmental Panel on Climate Change (IPCC) was predicting that if emissions rose in a “business as usual” way, which they have done, then global average temperature would rise at the rate of about 0.3 degree Celsius per decade (with an uncertainty range of 0.2 to 0.5 degree C per decade). In the 25 years since, temperature has risen at about 0.1 to 0.2 degree C per decade, depending on whether surface or satellite data is used. The IPCC, in its most recent assessment report, lowered its near-term forecast for the global mean surface temperature over the period 2016 to 2035 to just 0.3 to 0.7 degree C above the 1986–2005 level. That is a warming of 0.1 to 0.2 degree C per decade, in all scenarios, including the high-emissions ones. At the same time, new studies of climate sensitivity—the amount of warming expected for a doubling of carbon dioxide levels from 0.03 to 0.06 percent in the atmosphere—have suggested that most models are too sensitive. The average sensitivity of the 108 model runs considered by the IPCC is 3.2 degrees C. As Pat Michaels, a climatologist and self-described global warming skeptic at the Cato Institute testified to Congress in July, certain studies of sensitivity published since 2011 find an average sensitivity of 2 degrees C. Such lower sensitivity does not contradict greenhouse-effect physics. The theory of dangerous climate change is based not just on carbon dioxide warming but on positive and negative feedback effects from water vapor and phenomena such as clouds and airborne aerosols from coal burning. Doubling carbon dioxide levels, alone, should produce just over 1 degree C of warming. These feedback effects have been poorly estimated, and almost certainly overestimated, in the models. The last IPCC report also included a table debunking many worries about “tipping points” to abrupt climate change. For example, it says a sudden methane release from the ocean, or a slowdown of the Gulf Stream, are “very unlikely” and that a collapse of the West Antarctic or Greenland ice sheets during this century is “exceptionally unlikely.” If sensitivity is low and climate change continues at the same rate as it has over the past 50 years, then dangerous warming—usually defined as starting at 2 degrees C above preindustrial levels—is about a century away. So we do not need to rush into subsidizing inefficient and land-hungry technologies, such as wind and solar or risk depriving poor people access to the beneficial effects of cheap electricity via fossil fuels. As the upcoming Paris climate conference shows, the world is awash with plans, promises and policies to tackle climate change. But they are having little effect. Ten years ago the world derived 87 percent of its primary energy from fossil fuels; today, according the widely respected BP statistical review of world energy, the figure is still 87 percent. The decline in nuclear power has been matched by the rise in renewables but the proportion coming from wind and solar is still only 1 percent. Getting the price of low-carbon energy much lower will do the trick. So we should spend the coming decades stepping up research and development of new energy technologies. Many people may reply that we don’t have time to wait for that to bear fruit, but given the latest lukewarm science of climate change, I think we probably do.