# 1AC

## 1AC---Technology Exclusion

### 1AC---Competition ADV

#### Contention 1 is Competition.

#### The present scope of monopolization policy permits Big Tech to engage in unilateral, exclusionary conduct---that wrecks lagging incumbents, nascent rivals, AND deters future entrants.

Jonathan B. Baker 21, Professor, Law, American University's Washington College of Law, "Protecting and Fostering Online Platform Competition," Journal of Competition Law & Economics, Vol. 17, Issue 2, June 2021, pg. 2-8.

Online platforms serve an important economic function: they facilitate economic interactions among end users and competition among sellers who connect to the platform. There are many varieties and many familiar examples. Amazon’s Marketplace connects shoppers and manufacturers, and facilitates competition among manufacturers. Apple and Google (Android) have app stores that connect applications developers and smartphone or tablet users, and facilitate competition among developers. Social media platforms (for example, Facebook and LinkedIn) connect members to one another, permit advertisers and advocates to reach members, and facilitate competition among advertisers and advocates. Search engines (for example, Google and Microsoft (Bing)) allow advertisers to interact with consumers and to compete with other advertisers.

Other online platforms include payment systems (for example, Visa and MasterCard), broadband providers, and restaurant reservation services (for example, OpenTable). Online platform markets often tend toward having a dominant platform. One reason involves network effects: as platforms gain more users, they often become more valuable to users, which may allow them to attract even more users. Network effects may be direct, as with social media and communications platforms, or they may be indirect, as with shopping platforms. More shopping platform consumers make the platform more attractive to sellers, and vice versa.

Scale economies in supply also may lead to a dominant platform. The fixed costs of platform operation may be large, while the costs of adding additional users may be small. Or important costs (for example, for product delivery) may decrease as the number of users grows.

The emergence of a dominant platform is not inevitable. In some markets, network effects and user switching costs may be naturally low or largely exhausted at a scale that allows multiple platforms to be viable. User control over data, as with portability, can reduce switching costs. Switching costs can be low in markets where users value multihoming (use of multiple platforms), and it is not prevented by the platform’s architecture or terms of use. Interoperability may permit multiple platforms to share network effect benefits. When users vary in their preferences for platform features, multiple differentiated platforms may successfully co-exist.

In markets with a dominant online platform, the most important competition may come from potential rivals and fringe competitors. If platform users are willing and able to switch to a rival with a superior product, dominance can erode. The market could even tip to the rival: as the rival benefits from increased network effects, it may attract even more users and it may become dominant. In some cases, even the mere possibility that a fringe rival or entrant could expand and replace the incumbent could constrain a dominant platform’s exercise of market power to some extent.

Exclusionary conduct by a dominant platform can suppress this key competitive force. Think, hypothetically, for example, of Google excluding Bing, Amazon excluding Walmart, or Facebook excluding Snap (Snapchat). Here, “exclusion” means disadvantaging and possibly marginalizing rivals, in addition to possibly forcing them to exit or preventing their entry. The dominant platform also may find ways to exclude nascent or potential platform rivals, not just current rivals, by impeding entry and expansion.

At the same time, exclusion of competitors does not necessarily add up to harm to competition. If one pizza parlor sets fire to a neighboring store, and there are a number of other pizza stores in the neighborhood, the local pizza market would likely remain competitive so the exclusionary conduct is most likely just a business tort, not also an antitrust violation. But when a market has a dominant firm, the loss of any rival—even a small rival or a potential one—can often reasonably be expected to reduce the odds that competition will emerge. Under such circumstances, harm to a competitor can be expected to create a material risk of harm to competition.

Dominant online platforms can adopt a number of strategies to exclude actual or potential platform rivals.4 One possible exclusionary strategy involves exclusive dealing: a dominant platform could simply forbid its sell-side users (for example, manufacturers or advertisers) from patronizing a rival platform. Platform most favored nations (price parity) provisions may have a similar exclusionary effect when the rival platform’s strategy is predicated on offering low seller prices. Or the platform may make it more difficult for rivals to attract users by increasing customer switching costs, for example, by introducing membership fees (perhaps combined with lower usage prices) or by preventing interoperability or multihoming.

The anticompetitive conduct in several prominent predigital examples of exclusionary platform conduct can be thought of as locking-in users by preventing multihoming or, alternatively, as exclusive dealing: the Lorain Journal newspaper excluded a local radio station entrant by declining to accept advertisements from merchants that advertised on the radio station;5 the FTD (telephone) flower delivery network impeded the development of rival networks by preventing its florists from signing up with other networks;6 and Mastercard and Visa prevented member banks from issuing credit cards offered by other payment systems, including American Express and Discover.7

In the digital world, dominant online platforms may adopt similar strategies to exclude platform rivals. They may also exclude platform rivals by foreclosing their access to data generated by users. With less data, or less data of certain types, an entrant or rival may have less ability to exploit network effects or obtain scale economies. In addition, dominant online platforms can exclude by acquiring potential rivals, whether nascent platform competitors or sellers of complementary (or vertically related) services that could become rivals. For example, some have suggested that Facebook harmed social media competition by acquiring Instagram, or Google maintained its advertising dominance or achieved dominance in advertising technology by acquiring DoubleClick.

When online platform owners also use the platform, moreover, they can employ exclusionary strategies against rival end users. It is not uncommon for platform owners to be users as well. Amazon runs a marketplace on which it sells private label products. Google has a search engine and also provides shopping services such as flight information. Apple runs an app store and offers services similar to those provided by some apps. For example, it offers Spotify’s music application as well as its own music application.

A platform that is also a user can impede entry or expansion by rival users through input or customer foreclosure—and it may have the incentive as well as the ability to do so by virtue of the fact that it is both user and provider. It could, for example, bias search results to favor its own products or to disfavor rivals’ products, or refuse to link to rival users. It could also target rival users for product design or price competition, perhaps using its privileged access to customer data when rival users have less access to data so they cannot easily fight back. These possibilities do not exhaust the ways a dominant platform can exclude rival platforms or rival users, but they do illustrate economic incentives and mechanisms that could lead to such reductions in competition.

II. ANTITRUST LAW AND POLICY

Antitrust law and policy seek to deter and remedy conduct that harms competition, including exclusionary conduct by dominant platforms. Such conduct can be reached by U.S. antitrust law if undertaken by agreement,8 if undertaken by a dominant firm (one with what the law terms “monopoly” power) or by a large firm with a dangerous probability of achieving monopolypower,9 if undertaken through exclusive dealing or tying in the sale of goods,10 or if undertaken through acquisition or merger.11

The evidentiary burdens of establishing competitive harm from exclusionary conduct can be demanding, however. Exclusionary unilateral conduct cannot be challenged under Section 1 of the Sherman Act, which requires proof of an agreement. If that conduct is undertaken by a firm with a share too low to prove monopoly power or dangerous probability of successful monopolization and direct proof is unavailable,12 the conduct cannot be challenged under Section 2 of the Sherman Act.13

Beyond satisfying the agreement prerequisite for Section 1 liability, or the monopoly power (or dangerous probability of success) prerequisite for Section 2 liability, the plaintiff must demonstrate that the exclusionary conduct harms competition.14 Yet, a variety of judicially created hurdles may impede doing so in meritorious cases. Courts have treated exclusionary nonprice vertical conduct as presumptively procompetitive, even in settings such as oligopoly markets and markets with dominant firms where it is well-established that vertical restraints can harm competition.15 In some cases, courts have declined to condemn exclusionary conduct that harms competition on balance if the conduct benefits competition in any way, or plausibly could do so, regardless of the magnitude of the competitive benefit.16 Importantly for dominant platforms, some commentators interpret the Supreme Court as suggesting that the prohibition on monopolization would not reach unilateral refusals to deal with a rival by a vertically integrated platform, that is, one that is also a supplier (or seller of a complementary product), unless the platform had previously supplied the rival.17 In order to adopt this suggestion as holding, however, the Court would need to overrule Lorain Journal18—a platform monopolization decision predicated on a unilateral refusal to deal that was later endorsed by both Robert Bork and the modern Supreme Court.19

The Supreme Court’s American Express decision may create additional hurdles for plaintiffs bringing meritorious exclusion cases against dominant platforms.20 It suggests that market definition is required, and direct evidence is insufficient for proving market power, in exclusionary vertical restraints cases (conduct involving an agreement between a firm and its suppliers or distributors).21 If this is how American Express is interpreted by lower courts, it may require fact-finders to analyze, for example, the extent to which different social media compete for attention, online advertisers compete with cable and print ads, or general-purpose online retailers compete with brick and mortar retailers or specialized online retailers–even when direct evidence would make it possible to demonstrate competitive harm or market power reliably without making an inference from market shares, and thus without reaching potentially difficult market definition questions. American Express may also require courts to analyze the competitive effects of conduct by transaction platforms within cluster markets encompassing end users on both sides22—which can create confusion when evaluating competitive harms.23

Beyond these legal issues, there are a number of practical impediments to bringing meritorious exclusion cases against dominant platforms. The most important problems impede challenges to the exclusion of nascent rivals and potential entrants. The antitrust laws reach such conduct,24 but it can be difficult for governmental or private plaintiffs to prove that nascent or potential rivals are a competitive threat, even when that is in fact the case, simply because those firms, by definition, lack a track record showing what they can do; the proof may end up turning more on capabilities than on past results. When exclusionary conduct deters potential rivals from even attempting entry, an antitrust case may be difficult to prove because it may be hard to tell whether the excluded firm is truly a potential entrant that could become a viable and effective competitor. These problems, particularly when exacerbated by judicial delays, mean that a range of damaging exclusionary conduct may not be deterred and that courts may be unable to restore competition (as by preserving the excluded firms).

In addition, foreclosed rivals, whether actual or potential competitors, may have little incentive themselves to challenge the exclusionary conduct of well-heeled platforms. Even where its case is strong, moreover, a rival may do better accepting a large financial settlement that leaves the platform’s monopoly power intact, rather than litigating to create competition.25

When a potential entrant is acquired, it can also be difficult to show that competition is harmed. Courts now require that the plaintiff, which is usually a government agency, show that the potential entrant would have otherwise entered the market rapidly and been viable, and that there are few other likely potential entrants.26 Evidence of competitive harm may be hard to come by because a potential entrant that has been acquired for a high price would have little incentive to support the government’s challenge.

Meritorious exclusion cases against dominant platforms are also impeded by the erroneous assumptions that some courts accept, at times encouraged by defendants and non-interventionist commentators.27 Some erroneous assumptions are about markets. It is wrong to suppose, as a general rule, that monopolies lead to more innovation than competitive markets, that forcing a monopoly platform to admit rival users will reduce innovation by both the monopolist and its rivals, that the exercise of market power rapidly self-corrects through entry, or that business practices prevalent in competitive markets, such as vertical restraints, are unlikely to harm competition when employed in oligopoly markets or markets with a dominant firm.

Other erroneous assumptions are about courts. It is also wrong to suppose, in general, that courts cannot tell whether exclusionary conduct harms competition or promotes it, that erroneous judicial precedents are more durable than the exercise of market power, or that the litigation process is manipulated by complaining competitors.

#### The impact of that behavior is magnified particularly by two factors:

#### 1. Data---the excessive monopolization causes pervasive exclusion.

Michael L. Katz 19, Sarin Chair, Strategy and Leadership, University of California, Berkeley's Haas School of Business, "Multisided Platforms, Big Data, and a Little Antitrust Policy," Review of Industrial Organization, Vol. 54, 2019, Springer.

The nature of user data has several broad implications. First, if user data are commercially valuable, lack substitutes, and are not shared across platforms, then the existence of significant increasing returns in collecting and utilizing user data can limit the number of viable competitors and create a “data barrier to entry,” especially when the accumulation of the necessary data takes considerable time.9 The resulting levels of industry concentration raise the possibility that platforms will have substantial market power and that their conduct can raise antitrust concerns.10 Indeed, some people are concerned that big data will create unlimited advantages of scale and scope that will lead to the domination of a wide swath of the economy by a handful of frms.11 \*\*\*FOOTNOTE BEGINS\*\*\* Khan (2017, p. 792) expresses this concern with user transaction data. It should be noted that, although certain transaction data may be very broadly useful, it may also be the case that, the more widely given data can be used, the greater the range of alternative user transactions that can serve as substitute sources of data. Moreover, there may be diminishing marginal returns to the sizes of datasets: At some point additional data may lead to little improvement in the performance of the algorithms that are based on those data. \*\*\*FOOTNOTE ENDS\*\*\*

Second, to the extent that user data lack substitutes and are important to a platform’s success, the possibility arises that a platform may engage in exclusionary conduct that is intended to weaken rivals’ ability to compete by limiting their access to user data or making that access more costly.12 The desire to raise rivals’ costs could motivate a wide range of conduct, including: refusing to sell data to rivals (or doing so only at elevated prices intended to raise rivals’ costs); entering into exclusive contracts with third-party data providers; or creating obstacles to user data portability (e.g., by storing data in proprietary formats or denying users control of data about them). The desire to weaken rivals could also motivate predatory behavior, whereby a platform seeks to prevent rival platforms from attracting users and sales that would otherwise generate data and strengthen the rivals’ abilities to compete.

Third, when user data are an important asset, they can be a central part of analyzing the competitive effects and/or efficiencies of a merger. In many respects, the issues that are posed are standard ones for merger policy. However, user data raise at least three issues that are somewhat novel or may arise with particular force. First, to the extent that particular datasets lack substitutes, a platform might use a merger to obtain data in order either: (a) to use those data to compete more effectively; or (b) to preempt rivals from obtaining data that would allow them to compete more effectively. Second, the role of user data may suggest reasons to consider potential entry arguments more seriously and broadly than is typical. Third, because it may be possible to share user data and because the value of a given dataset could decay rapidly, there are issues in designing remedies that are specific to user data.

Last, some of the possible uses of user data raise issues regarding price discrimination and user privacy. The latter set of issues is of particular interest. There are important questions regarding both: (a) the role of antitrust enforcement in promoting the use of efficient privacy protections; and (b) the effects that public policies that are intended to promote privacy have on platform competition and the realization of the goals of antitrust enforcement.

2 Raising Rivals’ Costs

I first examine the possibility of exclusionary conduct: If there are no good substitutes for a particular dataset that is important to a platform’s success, then a platform that controls access to that dataset may attempt to limit rivals’ access to it (or make that access more costly) in order to weaken their abilities to compete. This conduct could include refusals to sell data to rivals at reasonable prices, exclusive contracts with third-party data providers, or actions to create barriers to user data portability.

#### 2. Self-preferencing---it downgrades the ability to compete on dominant platforms.

Daniel A. Hanley 21, Policy Analyst, Open Markets Institute, "How Self-Preferencing Can Violate Section 2 of the Sherman Act," CPI Antitrust Chronicle, June 2021, pg. 4.

By unfairly modifying its operations to privilege its, another firm’s, or a set of firms’ products or services, self-preferencing enables a firm to unilaterally distort the relationships between dependent firms and customers to monopolize a market, fortify its dominance, destroy a competitor, or leverage into a new market. Self-preferencing can thus violate the Sherman Act and violate the principles of fair competition embedded in it.

Self-preferencing is not a novel behavior, but that does not put it outside the protections afforded by the Sherman Act.13 For example, the concern that a dominant technology company would use its infrastructure to sustain its dominance, leverage into new markets, and give favorable terms to some companies was a primary concern of the Department of Justice when it initiated its lawsuit that led to the breakup of AT&T in 1982.14 Other more modern examples of self-preferencing include manipulating search rankings to give a company’s own products or services an artificial boost or giving favorable search rankings for a selected few companies while blocking off access to such terms for others to monopolize an industry.15

Self-preferencing causes two primary harms to market participants and consumers. First, since self-preferencing artificially weakens a rival firm’s competitive position (who is often dependent on the provided service), it allows the perpetrator to unfairly maintain and extend its market power. When this happens, barriers to entry in an industry can increase, leading to less consumer choice, increased bargaining leverage of incumbent firms to extract or impose more favorable terms of service and conduct on dependent firms, and increased costs to dependent firms.

Second, self-preferencing causes significant exclusion and foreclosure effects, which can lessen consumer choice for alternative services. The exclusion of a firm can also cause consumers to lose out on the benefits of increased firm rivalry and potential innovation derived from it.16

The foreclosure effects caused by self-preferencing can also deprive a firm of the necessary scale to be a viable market participant.17 Moreover, even the threat of foreclosure can cause harm to consumers by deterring the entry of potential competitors since they will likely not risk entering a market that they can be unilaterally excluded from if they start challenging the dominant incumbent firm.18

#### Studies confirm both that exclusionary conduct harms innovation AND antitrust is critical resolve it.

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The big tech firms supposedly have an inconsistent attitude toward the third parties that sell on their platforms. On the one hand, they welcome these sellers because a broad array of complementary products enhances the value of their platforms.64 On the other hand, they deliberately undermine some of them when they enter a complementary market.

The critics charge that the tech giants suppress third party rivals in three main ways. First, when the platforms conduct searches for users, they allegedly bias the results, artificially downgrading third party products and elevating their own. This distortion reduces the visibility of rival products, depriving them of sales and narrowing consumer choice. Second, they allegedly use the nonpublic data they collect on individual third parties to determine which products are most popular and then offer the same products at lower prices. This targeted copying devastates the business of the third parties and undermines their incentive to develop new products. Third, the tech giants sometimes refuse to deal with third parties simply because they are competitors. For example, Amazon may agree with a branded product seller that Amazon will carry its brand – and only its brand – in a particular product category. After committing to exclusivity, Amazon allegedly removes competing sellers from its platform, curtailing consumer choice.65 Third parties cannot avoid the resulting harm because, they say, no good substitute for Amazon.com exists.66 \*\*\*FOOTNOTE BEGINS\*\*\* See, e.g., Mattioli, supra note 62 (“Because 39% of U.S. online shopping occurs on Amazon, according to research firm eMarketer, many brands feel they can’t afford not to sell on the platform.). \*\*\*FOOTNOTE ENDS\*\*\*

The following sections analyze each of these allegations, asking not only whether the asserted conduct has injured competitors but whether it has harmed consumers and whether it has resulted in monopoly power or a dangerous probability of monopoly power.

A. Biasing Search Results

Google, Amazon, and Apple have all been accused of search bias. Google’s behavior produced a major fine in Europe but, despite an extensive FTC investigation, no action in the United States. Recently, The Wall Street Journal uncovered evidence that Google had distorted the results of searches for videos to favor its own affiliate, YouTube. Other newspaper reports contain evidence of search bias by Amazon and Apple. True search bias would not be justified, since it would alter the priority of search results based on what contributes most to platform profits, not what best serves consumers. But while true search bias would be anticompetitive, there is little or no evidence, to my knowledge, that it resulted in actual or probably monopoly power.

1. Google

Federal authorities in both Europe and the United States have investigated Google for search bias. In 2017, the European Commission (EC) concluded that Google had altered its search results so that its comparison shopping service, Google Shopping, was generally placed ahead of competing services.67 Ruling that this conduct constituted an abuse of dominance, the EC fined Google €2.42 billion.68 Google had plainly redesigned its search algorithm to favor its own products. In 2007 it unveiled Universal Search, a new algorithm that gave “particular prominence to Google’s products.”69 Indeed, Universal Search placed Google Shopping “at or near the top of search results for comparative shopping services.”70 The issue was whether this priority was justified. The EC found that it was not, 71 and thus injured consumers as well as competitors.

The EC did not conclude, however, that Google’s search bias resulted in monopoly power. While Google does not charge consumers for searches or complementary services, it does charge advertisers to place messages on these products. The EC did not find, though, that Google’s new search design resulted in higher advertising rates. Although the new design reduced, often severely, the sales of rival products,72 the EC did not rule that it enabled Google to elevate its ad rates to monopoly levels. Advertisers apparently had other choices. 73

In the U.S., the FTC investigated Google’s new search algorithm but decided not to issue a complaint. Although its staff wanted to challenge some aspects of Google’s behavior, they did not recommend a complaint with respect to its search engine. 74 Like the EC, the FTC found that the sites Google downgraded lost significant traffic, but it did not conclude that Google gained monopoly power.75 Moreover, unlike the EC, it decided that Google’s new algorithm was justified. Richard Gilbert, an economist who consulted for the FTC, explained why: Universal Search produced a greater diversity of websites on the first results page and consumer responses indicated that they preferred that. 76 In short, the Commission found that Google’s new algorithm did not bias its search results; it enhanced them.77

In contrast, just last year a Wall Street Journal investigation concluded that Google had engaged in a different type of search bias: “When choosing the best video clips to promote from around the web, Alphabet Inc.’s Google gives a secret advantage to one source in particular: itself. Or, more specifically, its giant online-video service, YouTube.”78 The Wall Street Journal found that Google systematically favored YouTube in its search results even when competitors like Facebook Watch and Amazon’s Twitch carried the same or similar videos and even when the number of their views or followers was greater. 79 Google denied that it engaged in self-preferencing but did not offer an explanation for the results. 80 The Wall Street Journal’s sources maintained that Google wanted to drive traffic its way and increase its bargaining leverage with content providers, 81 reasons that hardly justify the change.

This report, in short, strongly suggests search bias, just like the reports on Amazon that follow. The House Antitrust Subcommittee Report presented additional evidence of self-preferencing, suggesting that Google continues to place its services above competing sites even when its ranking algorithm would not warrant that priority.82 None of these accounts, however, contains evidence of actual or probable monopolization.

2. Amazon

ProPublica found that Amazon’s search algorithm ranked Amazon’s products and products that use Amazon’s fulfillment services above rival products. Because placement matters so much, ProPublica concluded that this bias gave the favored products an “oft-decisive advantage.”83 A Wall Street Journal investigation uncovered another form of distortion. According to Amazon insiders, the platform altered its search algorithm so that it gives priority to products that are more profitable for Amazon. The new algorithm does not use profitability directly – Amazon’s lawyers barred that – but it employs proxies for profitability.84

Both reports indicate that Amazon has been skewing its search results to increase its net income. The reports do not analyze Amazon’s actual search algorithm; they rely on Amazon employees who are familiar with it. But if the insiders’ testimony is accurate, it indicates that Amazon has elevated its own interests above those of consumers.

Amazon’s choices, whether justified or not, do not appear to have led to monopoly power or a dangerous probability of monopoly power. The Journal report, for example, presents no evidence that Amazon has monopolized, or was about to monopolize, any relevant market. Ramsi Woodcock notes that this is a general problem with criticism of Amazon: “Critics appear not to have pointed to any evidence that Amazon has power in the individual markets for the thousands of products that appear for sale on Amazon’s website.”85 eMarketer data is consistent. It shows that Amazon’s market share of virtually every product category is small. For instance, its share of Home and Kitchen products is 11.1%, its share of Sports and Outdoor products is 5.7%, and its share of Baby products is 2.6%. The only exception is Clothing, Shoes, and Jewelry products, where Amazon’s market share is 47.7%. 86 This data is imperfect, however, because it calculates market shares based on the number of brands in a category, not total sales.87 \*\*\*FOOTNOTE BEGINS\*\*\* See id. Thus, if a single Amazon brand had much larger sales than a similar third party brand, these data would not reveal it. They would indicate that Amazon’s share and the third party’s share were the same. \*\*\*FOOTNOTE ENDS\*\*\* Yet it supports the notion that Amazon’s entry into complementary product markets has rarely, if ever, generated actual or probable monopoly power. If Amazon has been distorting search results, few if any antitrust plaintiffs could turn to the Sherman Act for relief.

3. Apple

A New York Times investigation suggested that Apple has also been biasing search results. A data analysis firm retained by the Times found that “for more than a year, the top results of many common searches in the iPhone App Store were packed with the company’s own apps. That was the case even when the Apple apps were less relevant and less popular than ones from its competitors.”88 Here, however, search bias may not have been the culprit. Two senior Apple executives acknowledged the results but maintained that they reflected the merits of Apple’s products, not deliberate distortion. The executives stated that “the company did not manually alter search results to benefit itself. Instead, they said, Apple apps generally rank higher than competitors because of their popularity and because their generic names are often a close match to broad search terms.”89 In any event, “the company had since adjusted the algorithm so that fewer of its own apps appeared at the top of search results.”90

This account is puzzling. If Apple’s original search algorithm served consumers, why was Apple was so willing to change it? Whatever the answer, the Times report contained no evidence that either the original or the revised algorithm enabled Apple to monopolize a market.

In sum, there is reason to believe that three tech giants (Google, Amazon, and Apple) have displayed search rankings that artificially favor their own products. In each case, the evidence of distortion emerged from internal sources rather than deconstruction of their search algorithms. Yet this is likely to be the only practical method of demonstrating search bias in most instances. In two cases (Google and Amazon), the companies offered no justification. In no case was there evidence that the alleged bias led to actual or probable monopoly power. Together, these two conclusions – apparent anticompetitive conduct but no dangerous probability of monopoly power – support extending the reach of the Sherman Act.

B. Copying Rival Products

Critics also charge that the tech firms routinely undercut third parties that sell on their platforms by copying their most popular products.91 They allegedly identify those products by examining the confidential data they collect on individual third parties. In other words, they use nonpublic information about specific sellers to free ride on their product ideas, depriving them of business and undermining their incentive to develop new products.92 The tech firms compound the damage when they offer their own products at lower prices.93 Even the possibility of this behavior may limit the funding available to start-ups.94 Further, the threat of copying a rival’s product can make it easier to acquire the rival at a bargain price.95

Press reports suggest that both Amazon and Apple have mimicked third party products offered on their platforms. A 2014 study found that when Amazon first offered private label women’s clothing, its list of products included “25 percent of the top items first sold through [Amazon Marketplace] vendors.”96 Six years later, The Wall Street Journal interviewed Amazon employees who admitted they studied the sales data of specific third parties to determine which private label products to offer.97 Although Amazon had prohibited this conduct, 98 the employees said they ignored the rules or found ways around them. They were willing to skirt the rules because the nonpublic data helped them determine “how to price an item, which features to copy or whether to enter a product segment based on its earning potential.”99 Likewise, several press investigations found that Apple had upgraded its apps with “the features of the most popular apps that other innovators built.”100

This practice has generated such adverse publicity and hostile Congressional reaction that Amazon made no attempt to defend it on the merits. To the contrary, in response to the Journal story, it reiterated that it prohibits its private label product teams from accessing individual seller data and announced it had opened an investigation. 101 Three months later, Amazon CEO Jeff Bezos told a congressional hearing that the investigation was continuing and that he could not “guarantee . . . that this policy has never been violated.”102 Amazon eventually responded that its prohibition had not in fact been ignored: only one employee had accessed third party data with respect to the products in question and the data was aggregated, not seller-specific.103

Despite the widespread concern with the practice, the antitrust analysis is complicated because copying a rival’s product can be procompetitive. Indeed, competition often works through copying. When an entrant copies a dominant firm’s product and offers it at a lower price, consumers benefit. Likewise, when Amazon enters a complementary product market, it matches the quality of the incumbents’ product but charges a lower delivered price, causing total market output to increase.104 Established firms study their markets to learn which of their rivals’ product improvements to adopt so they can compete more effectively.105 To be sure, intellectual property law often prohibits such mimicking in order to protect incentives to innovate, but here the third party products were not patented and their distinctive features were not trade secrets.

There is data on what happens when tech giants enter into complementary product markets. Two studies looked at Google’s entry into the sale of apps for its Android operating system.106 A third investigated Amazon’s entry into segments of the Amazon Marketplace.107 As expected, two of the studies found adverse effects on the number of products third-party sellers offered. According to one, Amazon’s entry increased the turnover of third-party products by six percentage points.108 According to another, Google’s entry reduced the total quantity of app upgrades in the targeted product space by 7.9%. 109 It also caused the developers in that space to increase the price of their apps by an average of 3.7%. 110

At the same time, all three studies found significant consumer benefits. Many consumers preferred the tech giants’ products, causing them to curtail their purchases of third party products. It is this loss of business that led third parties to reduce the number of products and product upgrades they offered. In Amazon’s case, consumers switched because of its lower prices. When Amazon moves into a product category, it matches the prices that third parties charge,111 but reduces shipping costs to zero, lowering delivered prices. 112 Consumers value this so much that they increase their total purchases in the product category. 113 This growth in output suggests that consumer satisfaction rose.114

In Google’s case, consumers switched because they preferred Google’s apps. As noted, one study found that the loss of business caused third parties to reduce the total number of app upgrades they offered in the targeted product category. But this study also found that an impending Google entry increased other aspects of product development. Third parties accelerated their upgrades of non-competing products by 4% and their development of new apps by 3-10%.115 Further, the most popular apps – those least likely to lose business to Google – responded to the threat of entry by increasing upgrades on competing apps by 7.8% and upgrades on other apps by 15%.116 Overall, innovation may have increased. The other study found that it did. Examining over six thousand apps, the authors concluded that Google’s entry into the photography space led to substantial growth in innovation. Apps affected by Google’s entry were 9.6% more likely to issue major updates than unaffected apps.117

In sum, the studies indicate that when a tech giant enters a complementary product market, the impact on consumers is mixed but generally beneficial. Many third parties do curtail product development, but when Amazon enters, it offers lower delivered prices and consumers increase their total purchases of the category. When Google enters, it offers apps that many consumers prefer, other third parties step up their development efforts, and total innovation may rise.

Given these countervailing effects, a blanket ban on copying rival products would be difficult to justify. Since Amazon’s entry increases total output and Google’s entry may well promote overall innovation, a blanket ban could easily reduce consumer welfare. A vertical break up would be even more difficult to justify, since it would prevent the tech giants from offering any complementary products, even those that involved no mimicking at all and thus no direct threat to third party innovation. 118

In one circumstance, however, it would make sense to prohibit a tech giant from copying a third party’s product. When a tech giant identifies the product by using nonpublic data about a specific third party, its copying poses a particularly direct threat to innovation. In that circumstance, no other firm is producing the product, so the third party is a pioneer, and allowing a tech giant to take a pioneering idea is especially likely to undercut innovation. In contrast, when a platform uses other information – public information about popular products119 or nonpublic information that is aggregated across multiple competitors120 – there is less danger that the platform will free ride on a single seller’s innovation. To be sure, no empirical studies address the issue – where to draw the line on tech giant product copying – and thus any choice is tentative. But the lack of empirical research is a problem with tech giant exclusion generally,121 and should not stop courts or Congress from making reasonable judgments. Accordingly, it seems desirable to bar platforms from using nonpublic data about a specific third party to decide which products to copy. This would prevent the worst instances of free riding while giving the tech giants considerable latitude to enter complementary markets with cheaper or better products.122 Enforcing this rule would require internal information, but the Wall Street Journal had no trouble obtaining such information from current Amazon employees.123

C. Refusing to Deal with Rivals

Critics have also charged the tech giants with a third form of exclusionary conduct – refusing to deal with certain firms simply because they are competitors. For instance, Amazon allegedly enters into exclusive distribution arrangements with suppliers that require it to remove competing suppliers from its platform. One of the neo-Brandeisians contends that these expulsions amount to “illegal monopolization.”124 But she does not identify any markets that Amazon has monopolized through these expulsions. 125 Moreover, when she explains why the suppliers want this exclusivity, the story she tells (if valid) is procompetitive. According to her account, the suppliers sell products that require customer service in physical stores. They also sometimes offer their products through third parties on the Amazon Marketplace. The third parties frequently discount their products, however, which causes free riding. Consumers visit the physical stores to take advantage of the in-store service but then purchase the products online. To prevent this free riding, the brands make Amazon their exclusive online outlet. 126

In this account, in short, exclusivity is a response to a market failure.127 The account may be incorrect, but there is no evidence, to my knowledge, that Amazon expels third parties in order to gain monopoly power in a third party product market and then raise prices or depreciate product quality. Moreover, if Amazon had actually entered into exclusivity agreements, the problem could be dealt with under Section 1 of the Sherman Act, which does not require monopoly power.

There are also allegations of naked exclusion – refusals to deal with a firm solely because it as a competitor. In 2016 Apple allegedly blocked Spotify from access to the App Store simply because it posed a threat to Apple Music.128 Apple denies this, 129 and in any event, the exclusion was temporary. Spotify returned and consumer choice was restored. More serious allegations of exclusion are leveled in the FTC and state complaints against Facebook. 130 They claim that Facebook denied access to its APIs to app developers that competed with it or helped others compete with it. Specifically, Facebook adopted a policy that barred apps that replicated a “core functionality” of Facebook or linked to competing social networks.131 These refusals to deal were allegedly so effective that they deterred any direct challenge to Facebook’s platform, 132 thereby maintaining Facebook’s monopoly power. The complaints cite little evidence, however, that any of the affected apps would have developed into a competing social network. On the other hand, Facebook has not, to my knowledge, offered a justification for its refusals to deal, suggesting that its goal was indeed to reduce competition. Facebook simply asserts that it no longer engages in the practice.133

Epic Games has also accused Apple and Google of refusing to deal. Both tech giants removed one of Epic’s most popular games, Fortnite, from their app stores because Epic would not pay their standard commissions (30% of revenue) on in-game purchases.134 According to Epic, Apple and Google can charge such high commissions only because they make it difficult or impossible to obtain apps except through their app stores. As a result of this exclusionary policy, Apple is the monopoly supplier of apps for Apple phones and Google is virtually the sole suppliers of apps for Android phones.

Apple claims that this exclusivity is justified because Apple can thereby provide better safety, security, and other services to app users, and that its high commissions reflect the costs of furnishing those services. 135 But if that were true, Apple’s costs of operating the App Store would have to be $15-17 billion a year, 136 which is unlikely.137 Moreover, even if Apple’s costs were that high, the fundamental issue is whether its exclusionary conduct is justified. If consumers could obtain safe and secure apps from other sources, competition would increase and Apple’s commissions – and its costs – would be forced down. Many other platforms allow users to procure apps from other sources.138

D. Conclusion

The contours of unjustified exclusion are clear. When a tech giant uses its own profitability rather than the preferences of its customers to rank search results, it distorts consumer choice. When a platform uses the confidential data it gathers on individual third parties to identify their most popular products and then duplicates them, it is likely to reduce innovation. When a tech firm refuses to deal with a competitor simply because it is a competitor, it increases the platform’s market power and diminishes the options available to consumers.

All the tech giants appear to have used one or more these exclusionary tactics. The extent of their conduct will become clearer as ongoing proceedings unfold, but at this point it seems that all the tech giants have sometimes suppressed competition in complementary markets through unwarranted exclusion. At the same time, there is no evidence, to my knowledge, that this behavior led to monopoly power or a dangerous probability of monopoly power in any of these markets. The question, then, is how to deter it. Congress could break up the tech giants, which would diminish their ability and incentive to exclude. Or it could make the conduct itself illegal by amending the Sherman Act.

#### A concerted cycle of innovation in the technology sector sustains the US edge over China---failure causes conflict through cyberspace AND within numerous hotspots. BUT it’s not solely about the strength of the military ---the health of overall growth sustains vital US posture.

Karina Verónica Val Sánchez & Nezir Akyesilmen 21, Selcuk University-Konya, "Competition for High Politics in Cyberspace: Technological Conflicts Between China and the USA," Polish Political Science Yearbook, Vol. 50, Issue 1, 2021, pg. 46-63.

For many decades, the United States used its superiority in science and technology to ensure its hegemony, but today these powers also want to exploit it and bring about a shift in the balance of power. In this respect, Drezner (2001, p. 4) argues that “countries acquire hegemonic status because they are the first to develop a cluster of technologies in leading sectors” innovations impact the domestic economy and then impact internationally. When the hegemonic power slows down its innovation rate, it enters a period of struggle with the fast follower powers until a new ‘technological hegemons’ is found. In addition, the dominant power fears that “the other superpower might achieve a significant technological breakthrough and seek to exploit it” (Gilpin, 1988, p. 162). Taken together, these contributions suggest that the hegemonic power needs to maintain an advantage and superiority technologically against the powers that challenge its dominant position; otherwise, its position may be jeopardized (Deutch, 2018).

Lim and Kennedy’s work focuses particularly on analyzing the interaction between great powers, mainly on how technology and innovation create a rivalry between the dominant state and the rising power (Kennedy & Lim, 2018, pp. 553-572). Economic superiority is one of several elements that drive the rise of ascending power. Yet, in the long run, economic development is maintained through technological innovation, which “generate spillover effects to the rest of the lead economy and then to the global economy” (Drezner, 2001). The innovation imperative is when the rising power tries to acquire or create new technology to ensure its rise. In the process, it develops strategies and policies to acquire and develop technologies, but especially increases spending on research and development (Kennedy & Lim, 2018).

As a rising power, China needs to create new products and get new technology (Reuveny & Thompson, 2001). There are three ways in which technology is acquired: making, taking, and transacting. Taking involves non-transactional means. Making is the result of supporting local producers in creating new ones. Transacting is a commercial exchange of technology (Kennedy & Lim, 2018, pp. 556-557). In this sense, it is necessary to mention that China has no complex about the idea of copying inventions, products, or technologies in order to benefit from technological advances quickly (Lee, 2018, pp. 29-55). The United States has also highlighted the successful and constant attempts by Chinese hackers to access the American network in search of possible technological secrets (Segal, 2016, pp. 119-122). Some have even commented that Chinese military equipment is very similar to that of the United States (Segal, 2016, p. 120).

China and the United States are the world’s largest investors in research and development (R&D). However, the American model of innovation is subordinated to federal support, so it is alarming that in recent years federal support for R&D has declined and especially at a time of global competition where it is estimated that by 2030 China will be the country that invests the most in R&D (McRaven, 2019, 5) surpassing the US An insightful report by the Council on Foreign Relations (CFR) recommends that the US government should increase funding from 0.7% to 1.1% of gross domestic product (GDP) annually (McRaven, 2019: 6) so that the US does not lose its technological advantage and has a greater involvement as the private sector is currently at the forefront (Glosserman, 2020).

The actions of the ascending power unleash two types of effects concerning the dominant power: which firstly experiences a threat to its national security (security externalities) and subsequently to its position in the international system (order externalities) (Kennedy & Lim, 2018, pp. 553-555). As mentioned in the first part, the US NDS states that China is a threat to the current order of the international system (order externalities) (Mattis, 2018, p. 2). Also, China’s ambitions to access emerging technologies with military applications are also perceived as a threat to US national security (security externalities). China wants to catch up with the United States in military technology and eventually overcome it (Mori, 2018, p. 2). Both the United States and China compete to dominate militarily exclusive breakthrough technology because it could shape next-generation military capabilities (Mori, 2018, p. 22).

The growing techno-rivalry has motivated both powers to adopt a techno-nationalist approach to maximize their national power. As China’s supreme leader, Xi Jinping is convinced that the technological backwardness experienced in the past as a nation is rooted not in the lack of knowledge but the lack of its application for social and economic development (Xi, 2014). That is why he has focused on removing institutional barriers “to unleash to the greatest extent the huge potential of science and technology as the primary productive force” (Xi, 2014). Xi also stated the urgency of seizing the moment to take advantage of technology “I have repeatedly said that the great rejuvenation of the Chinese nation can in no way be realized easily. In fact, the stronger we become, the greater resistance and pressure we will encounter. That is why we say that timing and resolution are vital, as historical opportunities are often ephemeral. Now we have an important historic opportunity to promote scientific and technological innovation. We must not miss it, but seize it tightly” (Xi, 2014).

Xi Jinping is sure that a nation with technological inferiority is catastrophic for the total fulfillment of the Chinese dream (Paul, 2020). That is why he is working on initiatives that will lead the nation towards the fulfillment of that dream and to realize the Two Centenary Goals (Xi, 2014), namely ‘Belt and Road Initiative’ and ‘Made in China 2025’.

A) ‘Belt and Road Initiative’ (BRI)

It was 2,100 years ago, during the Han Dynasty when the silk road began. However, it was not until 2013 that Jinping presented a modern route: Silk Road Economic Belt and the 21st Century Maritime Silk Road. A first glance suggests that it is a route connecting China to the rest of the world (more than 60 countries), but in fact, it is a broader proposal that involves many variables aligned to achieve long-term interest (Yunling, 2015). According to Jinping, One Belt and One Road (OBOR) “represent paths towards mutual benefit which will bring about closer economic integration among the countries involved, promote the development of their infrastructure and institutional innovation, create new economic and employment growth areas, and enhance their capacity to achieve endogenous growth and to protect themselves against risks.” (Xi, 2014, p. 339).

B) Made in China 2025 (MIC2025)

Since its proposal in 2015, MIC2025 represents China’s industrial policies for the next decade. The central axis is China’s transformation into a global technology power (Chen et al., 2020). Hence, it is necessary to integrate advanced manufacturing techniques into the manufacturing industry. This sector is one of the largest in the world and faces serious problems of technology and innovation; therefore, there are many backward industries. MIC2025 seeks to mitigate these deficiencies through a megaproject approach (Lin, 2020). Also, MIC2025 sketches out a three-step strategy to upgrade the Chinese manufacturing industry towards an “industry 4.0” 1) innovation and efficient manufacturing processes to achieve industrialization by 2025. 2) China should be at the level of the manufacturing base of developed countries to compete with them by 20235. 3) China will be a manufacturing superpower. For the latter strategy, MIC2025 establishes clear principles, goals, instruments, and specific industries (Cheung et al., 2016). For instance, it has five sub-plans aimed at facilitating government participation: Manufacturing innovation center construction plan, Intelligent manufacturing plan, Core industrial capability strengthening plan, Green manufacturing plan, High-end equipment innovation plan. Also, it stresses ten priorities industrial areas among them agricultural equipment, aerospace, biomedical, railway, marine engineering and ships, new energies, new materials, power generation equipment, and of course automated machine tools and robotics and the new generation of information and communication technology (ICT), which will focus on three main technological areas: microchips and related hardware, information and communication devices, and industrial processing systems and software. These last two industrial priorities are particularly relevant to technological competition.

Can the United States deter Beijing’s techno-nationalist ambitions? It depends on the seriousness of the Chinese challenge (Bey, 2018, p. 33). China is strongly responding to an innovation imperative as a rising power, putting forward strategies and plans to be able to obtain, make and take technologies (Kennedy & Lim, 2018). MIC2025 is the route the Chinese government has set out to achieve “self-sufficiency” and become a “manufacturing superpower” (Laskai, 2018b). As expected, this plan has been highly criticized by the US government. If China continues its technological push as it has so far, US superiority will likely extend for another decade until it is finally surpassed (Rasser, 2020).

Nature of the Conflict: Low or High Politics?

The Donald Trump administration has published two documents highlighting the international scenario that the United States is facing and the necessary actions to be taken. The first document is the 2017 National Defense Strategy (NDS) and 2018 National Security Strategy (NSS). In these documents is possible to identify a particularity that articulates both strategies: the return of great power competition (Trump, 2017, p. 27). The United States is involved in a great-power competition with China and Russia, and today it is the biggest national security threat they have to face (Mattis, 2018, p. 1), displacing the threat of terrorism into the background. Strategic competition is the best way to avoid large-scale conflicts (Blankenship & Denison, 2019, pp. 43-44), and to face this competition, it is necessary to maintain political, economic, military, and technological advantages (Trump, 2017, p. 3), because “every domain is contested—air, land, sea, space, and cyberspace” (Grieco, 2018, p. 3). Swaine (2018, p. 55) argues that the Chinese authorities very badly received these documents because the US “ignore Beijing’s supposedly cooperative, win-win approach and peaceful intentions” (Swaine, 2018, p. 55).

The NDS (2017) and the NSS (2018) are major shifts in US foreign policy. Distinguishing it diametrically from the foreign policy that the Obama administration had towards Russia, but especially towards China “shifting from an engagement-based approach toward a competition-based one” (Mori, 2019, p. 77). This change in approach is mainly motivated by the prolonged and failed US strategy towards China (Friedberg, 2018, pp. 15-17).

These documents serve as policy guidance for specific US national security and defense priorities. In both documents, Beijing represents a competitor and a threat to US prosperity and security. In this sense, following a competition-based approach, it is possible to identify three shifts towards China under the Trump administration:

First, the US government has begun to operate in a very coordinated way to address the unfair acts of Beijing, namely forced technology transfer, intellectual property theft, cyberespionage, cyber-theft, market access, and the large trade imbalance in China’s favor (Lau, 2020, pp. 32-34). For instance, the United States, through the Committee on Foreign Investment in the United States (CFIUS), has prevented investment in American technology companies by the Chinese venture capital firm. The power granted to this Committee by the Foreign Investment Risk Review Modernization Act (FIRRMA) is that it is even allowed to directly block potential purchases and investigate foreign entities. One of the most notorious cases is the blockade that the CFIUS made to prevent the purchase of US Lattice Semiconductor, which produces chips for the development of artificial intelligence technology (Hoadley & Lucas, 2018, p. 11). According to the White House, the purchase was blocked because its sale carries a national security risk due to Beijing’s support for the operation (Johnson, 2019a, p. 10).

Second, the United States Congress has also done its part by actively participating in the approval of several legislation limiting China. The approval of the 2019 National Defense Authorization Act (NDAA2019) allowed the increase in the Department of Defense budget. The defense spending budget increases to meet the expenses involved in modernizing the US military and maintaining military preeminence and forward-based presence. The Department of Defense has shown special attention to the need to incorporate new technologies – “big data”, artificial intelligence, quantum technology, 5G, and robotics to ensure the US military’s technological advantage and compete with China.

Third, the issues addressed by the present administration are more varied and more politically sensitive, denouncing human rights violations within China, supporting the movement “Occupy Central” in Hong Kong (Jisi & Ran, 2019, p. 3), and expressing intentions for greater political participation in areas under political tension such as Taiwan and Tibet (Sutter, 2017, pp. 70-71).

As discussed above, relations between China and the US have shifted towards a more competitive relationship. At least two broad types of competitions appear to be taking place between the United States and China. First, the dispute is mainly about being first in emerging technologies with military use. The country that achieves the most militarily relevant innovations will be the one that obtains the largest benefits (Barnes & Chin, 2018). It is estimated that the new generation of technologies will ensure military superiority, information superiority, and economic superiority (Allen & Chan, 2017). Artificial intelligence has raised several alarms in matters of national security because on the battlefield, it provides speed and lethality. It also opens vulnerabilities to strategic nuclear stability (Fitzpatrick, 2019). Both countries have prioritized the development of AI technology. China has gone one step further, projecting that by 2030 to dominate the field of AI.

The Sino-American rivalry is not only commercial but also encompasses different dimensions. It should only be noted that after the tariff measures taken by the US in 2019, immediately after the attacks on Chinese technology companies began. The Trump administration prohibited US agencies from acquiring Huawei and ZTE equipment, and imposed greater restrictions on technology exports, put up stiff resistance to the adoption of Huawei’s 5G technology at the same time that discouraged allies from allowing this technology into their countries. Allies, such as Australia, New Zealand, and Japan, followed the American instructions. In 2012, US House Permanent Select Committee on Intelligence report indicated Huawei as a company that represents a risk to the security of citizens because of dubious handling of information on devices and suspicions of a backdoor that allows them to collect information, functioning as a means of cyberespionage (Heinl, 2017, p. 140) and also a threat in the military sphere due to the company’s relationship with the People’s Liberation Army of China (PLA) (NO, 2017, p. 3). However, the accusations stated by the US have been rejected by Huawei company, and to add evidence to their statement, Huawei has allowed the equipment they produce to be examined by experts from Government Communications Headquarters (GCHQ) in search of malicious software or backdoors and so far they have not found anything wrong (Inkster, 2019, p. 109).

The international market positioning of Chinese companies is becoming more and more noticeable. Now more than ever before, China is competing more closely in the creation of advanced technologies, so one of the US priorities is to discourage the pace at which Beijing advances in technology development (Inkster, 2019, p. 109) for national security and commercial reasons (Lau, 2020, p. 22). The trade war is only one manifestation of the real competition in technology (Chen et al., 2019, p. 5; Lau, 2020, p. 19). The US attempts to counter China’s efforts to become technological leadership and maintain its position as a dominant power by driving the world into a cold war over technology.

Second, a geopolitical rivalry for dominance in third states occurs on at least three dimensions: “maritime competition, competition for infrastructure funding, and competition for the digital network” (Mori, 2019, p. 81). To counter the “Made in China 2025” plan and China’s “Belt and Road Initiative”, the United States has pushed the “Free and Open Indo- Pacific Strategy” (FOIP) (Jisi & Ran, 2019, p. 3). The strategy includes Australia, France, India, Indonesia, Japan, and the United States. The central idea is to transform the Indo-Pacific region into broader regional cooperation by thinking of the region as one maritime zone. Economic, military, maritime, and foreign policy aspects are discussed to achieve it (Scott, 2019). The United States has shared interests with Japan and Taiwan. Japan, which is at the juncture of deciding whether to counter or support China’s rapid growth (Hosoya, 2019), and of course Taiwan, whose close relationship with the United States has raised concerns in mainland China (Auslin, 2018). However, both countries are experiencing a growing maritime pressure of The People’s Republic of China (PRC) as a threat to their security (Scott, 2019, p. 49), and FOIP would help them decrease the tension with China by having the United States as an allied. The projects developed by China in recent years are interpreted as an indication that China is seeking greater global projection with geostrategic repercussions, for instance, the digital Silk Road (Vila Seoane, 2020), the Maritime Silk Road Initiative (MSRI), and the Silk Road Economic Belt (SREB) are projects with geopolitical impact (Blanchard & Flint, 2017). Jisi (2014) is of the opposite opinion. It considers a “march westwards” strategy, that is to say, the creation of multilateral relations with countries located in the west by China can benefit the relationship with the United States because it functions as a “rebalancing” that would avoid a confrontation at sea or on Chinese territory. In this sense, the mentioned proposals should not be interpreted as China’s expanding global influence (Jisi, 2020) but rather as a “rebalancing” for more balanced Sino-US relations.

The US has a special interest in maintaining regional access to Asia to counteract China’s influence. Its main strategy is to form strong alliances, such as the partnership with India (Parameswaran, 2018). However, the Trump administration has not been efficient in making allies; on the contrary, it repels them by initiating trade wars with partners and adversaries (Blankenship & Denison, 2019, pp. 51-52). In addition to the projects China is carrying out in the region and which, given their scope, extend beyond the region, it is gaining influence through economic and political involvement with different organizations such as the Association of Southeast Asian Nations (ASEAN) (Noguchi, 2011, p. 76). It also aspires to become a maritime power to “ensure access to energy resources, foreign trade, and direct investment, but also to guarantee its protection against possible external threats” (Noguchi, 2011, p. 66). The reaction of other nations to the Chinese nation with a greater global presence can impact their domestic development and their participation in the international sphere. However, the international community’s correct interpretation of China’s aspirations and values as it seeks its place in the international order will be important in shaping its relationship with the Western powers in the long run (Jisi, 2011).

There are at least three motives why Washington chose to follow a competition-based approach to China now and not before. First, the growing perception within the United States that a relationship based on engagement in the common interest has left them with few benefits, and conversely, China has taken advantage of this situation. As an example, the constant infringement of property rights and espionage for economic purposes. Second, the American business community has expressed its discontent with the unfair competition they face within China and on US soil from Chinese competition. Third, the US sees the potential in China to interfere in domestic politics and influence societal opinion, including using devices to extract data from citizens (Mori, 2019, pp. 79-80).

The following sections outline how technological competition is developing in three ways: cyberspace, military technology, and artificial intelligence.

Cyberspace: A Battlefield for the US and China Rivalry

Cyberspace has become a contested domain, a critical battleground for the United States and China. In the last decade, the increase of cyber interactions in this domain provides us with enough information to analyze the motivation for competition between these two powerful states. As a matter of fact, both countries have ambitions for wide-ranging and rapid military modernization implementing new technologies and cyber capabilities. China has consistently focused on modernizing its military forces and developing military capabilities. Firstly, to maintain its regional dominance in the South China Sea, a region in constant dispute, and secondly to be able to cope with the US military power. Also, China competes for military dominance motivated by a desire for survival that goes beyond sovereignty and territorial integrity but is expressed in terms of keeping their resources and interests intact, so military competition is necessary for their survival.

Military superiority is one of the elements that have kept the United States as a hegemonic power. Therefore, China’s actions have not gone unnoticed within the US defense and security community, and it has started to see a potential military rival in China, largely because there are many doubts regarding its capabilities and intentions. The motivations of both powers are leading us towards a direct military competition. The American government is motivated to be the leader in developing new and more sophisticated military technologies to maintain defensive military superiority but, above all, offensive to deter rivals while maintaining its global influence. For the United States, survival is one of the vital motivations to compete because within an anarchic international system, there are attempts to challenge its hegemonic role.

The PRC has begun to compete against the United States for military superiority, mostly through cyber capabilities for warfare in cyberspace (Domingo, 2016, pp. 157-158). China cannot compete with the US in conventional military force; the Lowy Institute Asia index 2018 shows the big difference in military capability among these great power; the United States score 94.6 out of 100, China 69.9, and in third place, Russia 61.4 (The Lowy Institute, 2018, pp. 5-11). China has a special interest in competing with the States in cyberspace because it takes advantage of the United States in this domain, dependence on the Internet to operate its critical national infrastructure, modest cyber defense, and weaknesses of US cyber-based systems. China is using the United States’ cyber-dependency to its advantage.

Cyber dependence is a notion employed by Valeriano and Maness (2015), which measures the dependence of a state on the Internet to carry out its daily activities and the functioning of its infrastructure. Among the most cyber-dependent states in the world is Estonia in the first place, the United States, Germany in the same degree, and a little less China (Valeriano & Maness, 2015, pp. 25-26). The more cyber dependent a state is more cyber threat faces. Furthermore, cyber dependence associated with the “network readiness” notion, disclose why it is more important to control what happens in cyberspace for some state than for others. In this case, the US and China’s network readiness are among the highest in the globe. This argument is well explained by Eriksson and Giacomello (2009, p. 209):

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After a century of humiliation, China is beginning to revise the US-led international system, so Western interpretations of cyberspace and internet governance are being put on trial (Bey, 2018, p. 32). China is negotiating with the West international cyber rules that benefit its domestic policies (Bey, 2018, pp. 34-35) to ensure its national security, which depends largely on controlling the flow of information in cyberspace and Internet filtering. Jiang (2010) notes that Washington underestimates Beijing’s capabilities to regulate the Internet. Consequently, there are an Internet Governance Wars (Franklin, 2009), between a single, connected internet promoted by the US. and a bordered internet endorsed by China, whose proposal is incompatible with the actual Internet governance regime; Internet Corporation for Assigned Names and Numbers (ICANN), the Working Group on Internet Governance (WGIG) and World Summits on the Information Society (WSIS) organizations dominated by public and private actors from the United States (Eriksson & Giacomello, 2009). American and Chinese ideas about the rules that should govern cyberspace are linked to the political positions they hold (Bey, 2018, p. 31). China is more emphatic in emphasizing the idea of cyberspace as a part of its territory over which it has sovereignty and does not allow it to function without its direct administration (NO, 2017, p. 4) and less allows the interference of external forces that impose rules on how the Internet should function within its border, cyberspace is inviolate and indivisible (Heinl, 2017, p. 136).

For the US, cyberspace represents a critical battleground because it allows competitors to operate continuously against them in search of strategic advantage and gain influence or control by breaking down networks and systems (Nakasone, 2019, pp. 13-14). The first initiative presented by the US government to counter the security challenges introduced by cyberspace is The Presidential Decision Directive 63 (PDD-63). It was developed in 1998 to protect the United States from the growing threats from cyberspace that can endanger national security. PDD-63 had a largely defensive emphasis, establishing the need to integrate computer network defense and computer network attack capabilities to maintain military dominance and address any threats from nations or non-state actors against American interests. More recently, in 2009, the United States Cyber Command was established. It is a joint command for offensive and defensive military operations in cyberspace (Sunday, 2016, p. 162).

Espionage in Cyberspace: An Old Conflict with a New Face

While state-sponsored cyber-attacks are accepted as a natural form of coexistence in cyberspace, industrial espionage and cyber-theft of intellectual property are being pointed out as the no-go line (Bey, 2018, p. 35) among great powers. China has been in an espionage dispute with the United States for over a decade (Akyesilmen, 2018, pp. 233-236). Valeriano and Maness (2015, p. 47) define cyberespionage as “the use of dangerous and offensive intelligence measures to steal, corrupt, or erase information in the Cyber-sphere of interactions”. China is expertise exploiting gaps in America’s cyberspace defenses; this tactic avoids direct confrontation in another realm of cyberspace. Espionage works as a low-level demonstration of a cyber capability. China has launched several cyber espionage campaigns against the US government and the private sector (Goodman, 2010). Unit 61398 and 61486 are two of the principal espionage groups which frequently targeting US political and military intelligence. Cyberespionage can be used long or short-term depending on the purpose. In the short-term, “consistent with covert actions, either gains access or merely sends an ambiguous signal of resolve altering short-term strategic calculus” (Valeriano et al., 2018). In the long-term, espionage seeks to manipulate the balance of information to accomplish a position of political, military, or economic advantage (Valeriano et al., 2018). China is most likely to engage in an espionage attack, both short and long-term. The US is most likely to engage in degradation operations. From 2000 to 2016, the US-Chinese dyad experience overall 48 Cyber conflicts, China 43 times initiated the incident and five by the US. The aim of China within these 48 interactions, 34, was short- and long-term espionage (Brandon & Maness, 2000-2016).

At present, for the US, the highest cost comes from intellectual property theft (IP theft) (Nye, 2017). According to Read (2014), the suitable concept for intellectual property theft performed online is economic cyberespionage, define as “the practice of infiltrating these networks to acquire a trade, technological or economic information to benefit a foreign country or foreign agent”. Because the benefits far exceed the costs, China has no incentive to restrict its behavior (Nye, 2011). For example, in 2013, Chinese hackers exfiltrate data related to the C-17, a military transport aircraft, the C-17 research, and development cost $3.4 billion. Unquestionably, economic cyberespionage is cost-effective (Segal, 2016).

Read (2014) notes that after the 2010 Google’s disclosure that China successfully infiltrated its network, the US government modified its position to the economic cyber-espionage threat. The attack on Google and at least 20 other companies is known as Operation Aurora and started in 2009. Until Operation Aurora, US politicians did not take proactive decisions to obstruct the economic cyber-espionage campaign. After Operation Aurora, the Obama administration showed significant attention to intellectual property management and economic cyberespionage. In the Sino-American relationship, these became dominant issues. In September 2015, President Obama threatened with economic sanctions against Chinese firms over state-sponsored cyber-attacks on American companies. The same year the two nations reached a bilateral agreement to halt cyberattacks used for economic espionage, which led to a decrease in this type of interaction. However, by 2018 China had started to enter the US networks again. In 2018, the United States launched The China Initiative to stop the theft of intellectual property by China and make it clear that these types of practices are not tolerated anymore (Healey, 2019). Nevertheless, to date, this remains an issue on which both nations have not reached a final agreement and remains a tense aspect of the bilateral relationship (Healey, 2019, pp. 143-144).

Intellectual Property (IP) theft can be of three types: patent theft, copyright theft, and trade secret theft. According to cyber studies literature, one of the main perpetrators of intellectual property theft is China. Trade secret theft, defense technologies, computer software, and source code are protected by US trade secret laws and are especially vulnerable to theft through hacking, international investment, or switching of companies from senior managers who take with them the knowledge to reproduce such technology (Healey, 2019, pp. 140-143). There are also American technology startups for which the Chinese market is too attractive, and the only way they are guaranteed market access is by offering to transfer technology to the Chinese government. Although American intellectual property laws protect the technology operated by these companies, American trade secrets are exposed through this legal mechanism imposed by the Chinese authorities on foreign companies. In this way, they manage to get hold of foreign technology (Healey, 2019, pp. 143-144). China’s interest in accessing and developing new technologies through cyber-espionage threatens US economic competitiveness and has long-term costs to US innovation capacity (McRaven, 2019, p. 5) and defense capability.

China’s use of cyber-attacks for industrial espionage is linked to its industrial policy. Together with several projects, cyberspace is aimed at making the country capable of producing high technology and designing its products and goods. AI technologies have received much attention from the Chinese government, and even though the United States leads this area, China is the fast-follower, allocating billions in investment and financing, since 2014 surpassed the United States in AI research and AI-related patent registration. Today is indisputable Chinese leadership in frontier technologies (McRaven, 2019, p. 40). Nevertheless, US national security points out that the illicit behavior of the Chinese government is the means by which the government has achieved some technological advance and if in the future they manage to innovate, it will be the result of IP cyber theft and illegal technology transfer (Deutch, 2018, pp. 44-45).

China has no valuable reason to stop stealing intellectual property; on the contrary, the economic, technological, and military benefits deriving from this practice are far greater. Neither economic sanctions nor bilateral treaties have been able to eliminate this type of attack. The US cyber command has stated that the constant attack to which they are subjected in cyberspace requires them to fight and defend forward because their adversaries are engaged in offensive, defensive, and espionage operations, and these threats must not go unpunished (Healey, 2019, pp. 1-5).

The US cyber forces operate with a joint cyber strategy that combines cyber deterrence and active defense strategies; which consists of a constant presence in the cyberspace of the US cyber forces to be able to analyze the behavior of the enemy and “warn targets of the details of coming (or ongoing) attacks, improving US defense” and in the use of “cyber capabilities for deterrence purposes” (Healey, 2019, pp. 5). It should also be mentioned that the US cyber mission force has the power to carry out offensive operations, in the first instance to support “operational plans and contingency operations”, and when the nation is the victim of a cyber-attack of significant proportions, it can carry out “action beyond blocking and after-action mitigation” (Kehler et al., 2017, p. 74). The 2015 White Paper on Military Strategy also made it clear that China’s actions in cyberspace also contemplate active defense understood as “strategic defense and operational and tactical offense” (Kania, 2015) cyber-attacks are a means of reaction against any action that poses a threat (NO, 2017, p. 6). The force deployed in cyberspace is a sign of the increasing militarization that is taking place in this domain (Deibert, 2011).

The Militarization of Cyber Domain: Who Leads It?

The narrative of IP theft as a national security issue allows the United States to make two strategic moves; first, it allows it to point to states directly as being responsible for the theft of IP, for example, on the occasions that the United States has pointed out this practice, it directly blames China, rather than a group of hackers like The Red Hackers. Second, the division between “domestic economic innovation and the production of classified information” (Halbert, 2016, p. 256) becomes ambiguous as a consequence, the narrative of IP theft as a threat to national security is being used to validate the dominant presence of the United States in cyberspace, enhanced surveillance and control over the Internet for national security reasons.

Halbert (2016) identifies that it was in the document issued in 2008 entitled Report to the 44th President of the United States on Cybersecurity where the relationship between intellectual property and national security began to be shaped, and subsequent to this document is that the narrative began to be repeated in the following official documents issued by US presidents about the cyberspace (Halbert, 2016). In the May 2011 report International Strategy for Cyberspace, it states that to protect economic and national interests from threats such as IP theft, diplomacy will be used first but will also seek to deter and stop potential actors from threatening US national and economic security in cyberspace (Halbert, 2016, pp. 257-258). Intellectual property as a national security issue has “achieved a level of political valence akin to the elusive threat posed by the war on terror” (Halbert, 2016, p. 261) and open the possibility of military escalation (Halbert, 2016, p. 264). The increasing militarization of cyberspace and defensive actions of the US and China raise doubts about whether cyberespionage will continue to be interpreted as an unfriendly act or will have the impact of being considered an act of war.

On the other hand, there is reason to be concerned about the “danger discourse” around intellectual property theft that is being used in the first place to mobilize the military budget towards a strong cyber strategy which requires an accumulation of cyber resources and personnel to address the growing threats from the cyber domain, including intellectual property theft from state and non-state actors. Second, it is being used to monitor internet traffic, including a more in-depth analysis of civilian data.

At the end of the Pax Britannica, the United States took the place of global leader, which it has maintained mainly because of its scientific development, which has guaranteed economic and military supremacy over the other powers around the globe (Paarlberg, 2004). However, its technological leadership seems to be under threat. In 2004, Adam Segal wrote the essay is America losing its edge? and stated, “it would be premature to declare a crisis in the United States’ scientific or technological competitiveness” (Segal, 2004). Sixteen years have passed since then, and the United States’ situation is not the same. With its economic power, China mobilizes large investments towards the technological sector and rivals the United States in scientific or technological competitiveness (McRaven, 2019). China’s intentions are not limited only to dominate labor-intensive manufacturing. The government is trying to develop China’s indigenous technological capabilities to achieve military superiority, while the United States uses the arms embargo and tightened transfers on high technology, trying to constrain China’s rise (Goldstein, 2015).

The technological development promoted by the Communist Party is recent compared to other industrialized countries. It started only 30 years ago. From 1950 to 1980, the government decided to open its market to foreign capital in exchange for technological transfer. In this period known as techno-nationalism, the manufacturing industry was primarily developed. In the 1990s, the government decided to make a strategic shift by emphasizing indigenous innovation because while neighboring countries like Korea and Japan produced high-end, high-tech products, China produced low-cost manufacturing products. By supporting enterprises through subsidies, free land, and low taxes, companies like Huawei could flourish. The government dramatically increased its participation in technological development and became the guide of a “national technological innovation” phase (Liu, 2016, pp. 4-5). It was also a strategy to counter the US embargo imposed in 1989. The embargo covers mainly US defense technology and military systems. Since 1990, the defense industry has been a priority for the Chinese Communist Party (Bräuner, 2013, pp. 557-558).

China has two purposes in enhancing its military power, in principle to weaken the US military advantages (Shifrinson, 2020, p. 197) in Asia-Pacific (Simón, 2020, pp. 5-6) following the philosophy of “win without fighting” and in the long run to catch up with the US and become a science and technology power (Kania, 2017, p. 5) to ensure military superiority in all domains. Friedberg (2018, p. 35) says that in Asia-Pacific, the US power projection system has been eroded by China’s anti-access/area denial (A2/AD). In addition, he states that China is developing a naval strategy to project power beyond its shores, reaching out to “the Indian Ocean, the Persian Gulf and off the coast of Africa” (Friedberg, 2018, p. 38). As far as China is concerned, complemented and supported by other political instruments, the military instruments of the United States have two purposes: first, to enable the integration of Beijing into the processes of cooperative security and actions compatible with American interests in general. Second, to provide security to Asian allies by demonstrating that the United States has the military capability to provide security in the area and to discourage China from using military force as a means of conflict resolution in disputed areas, whether islands or states such as Taiwan (Swaine, 2011, pp. 147-148).

The ongoing military competition between the US and China is driven by two critical characteristics of the world technological scene. First, the commercial use and development of technologies such as artificial intelligence and quantum computing have increased. These technologies are both for military and civilian use making their proliferation and reflects greater diffusion than technologies exclusively for military use, resulting in state competitors and non-state actors being able to acquire them. Second, the first line of military competition is innovation because the development of high technology requires closing the gap between development and military implementation.

Washington and Beijing have responded to the changing innovation landscape. For its part, the United States has established Defense Innovation Unit Experimental (DIU) to get involved in the ecosystem of commercial, technological innovation. Chinese leaders have consolidated a civil-military fusion strategy that removes barriers between the private sector and the military-industrial base (Laskai, 2018a). China intends to transfer the success of the technology sector into military power. The civil-military fusion strategy allows it to involve the country’s high-tech civilian companies in defense projects.

In May 2016, the Innovation-Driven Development Strategy (IDDS) was officially declared by Beijing. The focus of this strategy is China as a champion of innovation. It provides an insightful and forward-looking projection of China over the next three decades.

1. Becoming an “innovative country” by 2020

2. Joining the leading edge of advanced innovation countries by 2030

3. Becoming a strong global innovation power by 2050

In this regard, Xi Jinping has declared: “To carry out the innovation-driven strategy, the basic thing for us is to enhance our independent innovation ability…” (Xi, 2014, p. 134) because “Under a situation of increasingly fierce international military competition, only the innovators win” (Zhong, 2017). China has developed three projects in which it has set the course for the next decades to increase its technological capabilities. Integrated Circuit (IC) 2014 Guidelines aim to reduce the dependence on US integrated circuit manufacturing by developing a local industry that produces chips and meets the consumer needs of Chinese industries. Perhaps one of the most well-known projects is Made in China 2025, an ambitious project that aims to transform the manufacturing industry through three transitions “From China’s speed to China’s quality; from China’s products to China’s brands; and from ‘made in China ‘created by China” (Liu, 2016, p. 2). Implementing this strategy requires industries to modernize their factories to apply smart technologies and solve the challenges they face, such as labor costs, pollution, and delays in production and export. Next-Generation Artificial Intelligence (AI) Development Plan aims to make China a world leader in AI by 2030.

In addition to the civil-fusion strategy, in the behavior of the Chinese government, one can identify the development of the “Going Out” strategy that encourages technology transfer from overseas (Mori, 2019, p. 82). China is investing billions in new American companies with cutting-edge products that could have military applications. China’s interest in US startups is focused on artificial intelligence and robotics. In this sense, the Trump Administration has made two important and necessary moves to define the future of the United States: reviewing carefully the process that allows Chinese investment in critical technologies and better controls on exports of sensitive technologies (Segal, 2019).

Artificial Intelligence Competition: A New Arms Race?

During the last decades, a technology that has burst onto the political scene is artificial intelligence (AI). Artificial intelligence can disrupt the international system (Demchak, 2019) and affecting the balance of power (Horowitz et al., 2018; Kania, 2017). Artificial intelligence can add sophistication, speed, precision, and lethality to military and strategic affairs (Payne, 2018). AI is a set of various computational techniques which operate in different dimensions, physically on objects: tanks, airplanes, robots can function without human intervention. In a non-tangible way, it operates in the processing and interpretation of information through image-recognition algorithms (Horowitz, 2018, p. 48). Also, AI is developed due to four analogous inputs “abundant data, hungry entrepreneurs, AI scientists, and AI-friendly policy environment” (Lee, 2018). These four inputs are found in large numbers in China.

We are entering into a phase where two great powers have an equal goal: to be the leader in all aspects of AI. Authors like Barnes and Chin (2018) estimate that this situation is triggering an escalating AI arms race because both nations want to be the first to find military applications of AI. Horowitz (2018) supports their point of view. He adds that there is a strong possibility that the use and development of autonomous lethal weapon systems will lead to an arms race. After all, military technology determines how wars will be fought and won (Sechser et al., 2019, p. 732).

The Pentagon has been closely following China’s movements, especially those involving military investment. Since 2014, the United States has initiated efforts to become a leader in AI to increase and maintain its economic and military power. Barnes and Chin note that William Roper, then the head of the Pentagon’s Strategic Capabilities, played a key role in getting the US government to take that direction and gain an advantage over China in the field of AI. However, in May 2017, a game between Ke Jie -the best player on earth of Go- against AlphaGo -one of the most advanced AIs in the world- triggered China to have its “Sputnik Moment”. AlphaGo’s victory from the Western viewpoint represented the victory of the machine over man. According to Lee for China, that game visualized in real-time by millions of Chinese affected the Chinese psyche and government policymakers, the West overwhelmingly showing its technological superiority and dominance in an era of artificial intelligence (Lee, 2018, pp. 11-29) which led the Chinese authorities to react.

Two months later of the Go game, China revealed to the world the New Generation AI Development Plan 2017, in it establishes its firm intentions to lead the world in AI by 2030, also sets out a three-dimensional agenda, namely “tackling key problems in research and development, pursuing a range of products and applications, and cultivating and expanding AI industry to 1 trillion RMB ($150 billion) by 2030” (Kania, 2017, p. 9). Since its release, China’s national AI Plan has promoted AI as a high-level priority for Beijing. Military-Civil Fusion AI has made China emerge as an AI powerhouse by working as one team with companies such as Baidu, Alibaba, Tencent, and iFlytec (Horowitz et al., 2018, pp. 12-14).

Harnessing AI Technology, the Chinese Communist Party (CCP) intends to strengthen its national and military power (Ahmed et al., 2018). According to Barnes and Chin (2018), to overtake the United States in the field of AI, China has adopted the American strategy to use it against them, firstly the creation of a Chinese version of the Defense Advanced Research Projects Agency (DARPA) called The Scientific Research Steering Committee, which will report directly to President Xi Jinping and secondly investing heavily in Zhongguancun where China’s Silicon Valley is located.

The first White House initiative in artificial intelligence was carried out in 2016 during the Obama administration’s National Artificial Intelligence Research and Development Strategic Plan. However, it was not until February 11, 2019, that the United States presented a whole-of-government strategy called AI Initiative. The fact that it took three years to present an AI strategy has been criticized, pointing to the slowness with which the White House has pushed cutting-edge technologies (McRaven, 2019, pp. 47-48). Key principles stated in Obama’s report were adopted more quickly in China than in the United States (Horowitz et al., 2018, p. 10). Dascalu (2018) compares the policies in AI presented by Obama and Trump concludes that: “the development of foreign AI policy will benefit the US as it will be a way to gain power through AI technologies and pursuing hegemony, as power will assure the survival of the US” (Dascalu, 2018, p. 35). In the last two years, the present administration has put considerable effort into prioritizing the development of artificial intelligence, a joint effort of both the White House and federal agencies to ensure that the US remains the world leader in AI. The most recent action by the White House was announced in February 2020. President’s FY21 budget commits to double AI R&D over two years and the recent adoption of AI ethics principles by the Department of Defense.

In general, both countries have prioritized AI because of the economic advantages that can be obtained from creating AI for specific uses by having the advantage of being the first IP registrars to ensure economic leadership. And secondly, the military advantage over the opponents by applying AI capabilities to their military (Horowitz et al., 2018, pp. 11-12), such as automation of decision making, command and control, and autonomous systems. For China, artificial intelligence matters because it is crucial to the future global military and economic power competition, and also, achieving leadership in AI technology is a step towards reducing dependence on international technology imports (Allen, 2019, pp. 3-4). It is crucial for the US to achieve an offset strategy -first nuclear weapons, second stealth, and precision strike- and AI is announced in the US as the third offset strategy (Payne, 2018, p. 7).

Halbert (2016, p. 262) suggests that “the data theft undertaken by the Chinese is specifically designed to improve their military and technological capacities”. However, having access to AI technology through cyber espionage or mimicry is not easy. Firstly, mimicking AI applications is expensive and complex. Governments that have developed this type of technology are forced to deal with the components in secrecy, which means that they are not found on the market mainly because they are classified. Also, the technical knowledge needed to develop, adapt, or modify algorithms and develop AI-based military capabilities requires advanced knowledge. Getting an AI application to work properly can take a long time. Secondly, the cybersecurity used by military technology to prevent hacking and spoofing is very high compared to the technology intended for civilian use, which adds an extra layer of security against copying attempts.

Is America Prepared for Winning the Competition Against China?

During the Cold War, the United States increased its power by engaging in internal and external balancing and overcoming the USSR. Since the end of the Cold War, the US has followed a strategy of primacy in different areas, domestic economic growth, technological innovation, and military might. However, nowadays, the US primacy seems to have ahead of the challenges that can take it to a level of competition similar to that of the Cold War. Blankenship and Denison (2019) question the capacity of the United States to successfully face this stage of the great-power competition against China because they perceive that the United States lacks internal and external balancing. Internal balancing is based on developing military and economic capabilities “and investing in technologies and other domestic areas that help convert the latent capabilities of the state into material strength” (Blankenship & Denison, 2019, p. 45). In contrast, external balancing represents the creation and strengthening of strategic alliances to face a common threat. As long as the United States does not change its strategy in critical areas such as human capital, a better relationship with the private sector, and R&D expenditures, the risk of losing the present competition to China is real.

#### Technological parity encourages Chinese aggression---that goes nuclear.

Gerald C. Brown 21, Defense Analyst, Valiant Integrated Services, "Understanding the Risks and Realities of China’s Nuclear Forces," Arms Control Association, 06/01/2021, https://www.armscontrol.org/act/2021-06/features/understanding-risks-realities-chinas-nuclear-forces.

Nevertheless, China’s capabilities represent a substantial threat that must not be ignored. Quantitative comparisons of nuclear arsenals are a relatively crude manner of understanding nuclear risks and, in the case of the U.S.-Chinese relationship, wholly insufficient. More than ever, U.S. policymakers need to understand Chinese nuclear strategy. In the U.S.-Chinese context, policymakers should be more focused on how conventional weapons and related strategies could impact the nuclear calculus between the two countries.

Chinese Nuclear Strategy

Unlike Russia and the United States, China has found nuclear weapons to be of rather limited utility in war-fighting. It built what it describes as a “lean and effective” nuclear deterrent, with the intentions of deterring a nuclear attack and preventing nuclear coercion.1 Strategists in Beijing have long thought that the destructive force of nuclear weapons limits their utility, while conventional forces are more flexible and usable in conflict. Conventional forces are thought to be where wars are won or lost.2 In that sense, China’s nuclear forces are intended to check U.S. nuclear dominance while winning conventional conflicts at lower levels of escalation. To make that happen, China is seeking to build a nuclear force capable of surviving a nuclear first strike and retaliating with an unacceptable level of damage. Experts have perhaps best described China’s nuclear strategy as one of “assured retaliation.”3 Instead of seeking parity with other nuclear states and being able to engage in counterforce campaigns, China finds it sufficient to maintain a more modest, secure, and survivable force. If China can sufficiently absorb a first strike and retaliate, even with only a few warheads, Beijing believes an adversary is unlikely to decide that the risk of attacking China is worth the benefit.

Since China’s first nuclear test in 1964, it has consistently maintained a public, declaratory no-first-use policy, adhering to what it describes as a “self-defensive nuclear strategy” that would anticipate using nuclear weapons only as a “counterattack in self-defense.”4 Western analysts have rightfully pointed out that a no-first-use pledge may not be entirely credible on its own. Although the pledge may be sincerely held, during a crisis, escalation could be unpredictable. Additionally, a small number of Chinese analysts have suggested that what China defines as a counterattack may be ambiguous under certain, limited conditions, such as conventional attacks seeking to neutralize China’s nuclear forces.5

Despite Western doubts, the fact remains that Chinese strategists believe that the pledge holds true. An unambiguous no-first-use stance remains the official stance of the Chinese government, and China’s nuclear strategy is built around this concept. Authoritative texts on Chinese military thinking have described three major missions for Chinese nuclear forces. In peacetime, they seek to deter enemies from launching a nuclear war with China. In wartime, they constrain the scope of war, preventing a conventional conflict from escalating to a nuclear exchange. If war does escalate to nuclear conflict, they serve to conduct nuclear counterattacks.6 The texts consistently describe only one envisioned use of nuclear weapons, the nuclear counterattack operation, in response to a nuclear strike.7

Operational practices have reinforced this. Beijing maintains a highly centralized nuclear warhead storage and handling system, with warheads typically thought to be stored unmated from their delivery vehicles rather than loaded and ready for launch.8 Further, training for nuclear brigades reflects the practice of counterattacking under nuclear conditions. Yet, there are indications of evolution. Recent U.S. government reports have suggested that some People’s Liberation Army Rocket Force (PLARF) brigades may spend time on higher alert and may seek to shift to a launch-on-warning posture in the future in order to increase survivability under nuclear attack. China has been developing a space-based early-warning system with assistance from Russia that could support this.9

Nuclear Force Projections

As the U.S. annual threat assessment noted, there are signs of recent substantial changes in Chinese nuclear forces. The most important changes have been primarily qualitative, but notable quantitative changes are also occurring. These are understandably alarming to U.S. policymakers. Although the size of Chinese nuclear forces may still be dwarfed by the U.S. arsenal, its growth represents a substantial complication for the United States. Further, although the United States and Russia are modernizing their arsenals, they have been reducing their stockpiles over the past few decades slowly but significantly. China’s nuclear expansion represents a concerning shift away from its obligations under the nuclear Nonproliferation Treaty to reduce its arsenal, and that is likely to impact U.S. and Russian decision-making.

Yet, understanding these changes in the context of China’s nuclear strategy is important. Instead of trying to reach parity with or exceed the U.S. nuclear arsenal, China seems intent on ensuring that it has an assured retaliatory capability following U.S. strikes. Given U.S. nuclear and technological superiority, China likely has never had a sufficiently survivable nuclear deterrent against the United States, a goal that was more aspirational than anything else. Revolutions in intelligence, surveillance, and reconnaissance technologies, coupled with advances in conventional precision weapons, have long rendered China’s nuclear forces vulnerable. The U.S. ballistic missile defense program threatens to intercept any surviving retaliatory force, further jeopardizing China’s retaliatory capability.

For the first time in history, the People’s Liberation Army (PLA) seems to be moving toward a survivable nuclear force capable of executing a second strike. Research suggests that Chinese nuclear expansions and modernization are oriented toward creation of a more mobile and redundant force that can survive U.S. counterforce capabilities, including conventional systems such as the Conventional Prompt Global Strike system, and its missiles being able to penetrate U.S. missile defense systems.10 Consequently, although China’s nuclear force size will expand, it does not appear likely to expand to the size of the U.S. nuclear arsenal in the near future.

There is understandable doubt about the claim of China doubling its nuclear arsenal, but it does not appear to be out of the question. China is fielding an increasing number of multiple independently targetable reentry vehicle weapons, such as the DF-5B deployed in 2015 and the recently deployed DF-5C and DF-41, that improve the ability of China’s intercontinental ballistic missile (ICBM) arsenal to penetrate the U.S. missile defense system.11 Defense Department estimates do not appear to include the DF-41, which is just starting to be deployed. Installing multiple warheads on these weapons will quickly expand the number of nuclear weapons in China’s arsenal. Further, PLARF brigades have been increasing at an unprecedented rate. The number of PLARF brigades reportedly increased from 29 to 40 between 2017 and 2020, and brigades continue to be added as new missile types are fielded.12

China’s shift to a nuclear triad will further increase the number of its nuclear warheads as these new systems are equipped. China is creating a more survivable nuclear submarine force, expanding the number of Type 094 ballistic missile submarines and developing the quieter Type 096 submarine with the JL-3 sea-launched ballistic missile as a complement. The PLA Air Force is also adopting a nuclear mission by developing a new air-launched ballistic missile that may be nuclear capable, as well as the nuclear-capable H-20 strategic bomber.13

[Chart omitted]

Significantly, not all of China’s nuclear weapons are intercontinental forces capable of striking targets located in the continental United States. China has invested in nuclear weapons that specifically threaten the immediate region. Its new air capabilities, along with recently deployed midrange and intermediate-range ballistic missiles such as the DF-21E and the DF-26, hold regional adversaries and U.S. overseas bases at risk. China also recently deployed a new hypersonic glide vehicle, the DF-17, that may be nuclear capable. Importantly, although China’s nuclear expansion may be oriented toward a strategy of assured retaliation, that does not prevent Beijing from orienting its expanding nuclear capabilities toward a more threatening posture in the future. As China’s capabilities expand, its operational doctrine may well follow suit.

Emboldened Conventional Operations

China’s nuclear forces can be considerably more concerning when not considered in isolation from other tools of war. Analysts and policymakers need to look at how nuclear weapons can affect the broader picture of warfare, including how they impact PLA conventional operations and the type of wars China envisions fighting.

China’s military strategy is focused on “winning informationized local wars,” effectively local, high tech wars in which the information domain will play a dominant role. Although the PLA’s reach is increasingly global, it has oriented itself toward local conflicts, with a particular emphasis on maritime conflicts, as the main war-fighting domain. This primarily concerns Taiwan but also the East and South China seas among others.14 In 2015, the PLA made a drastic change to its command structure, orienting itself into joint war-fighting theater commands, directly geared to fighting in these regions. The PLA seeks to deter the United States from intervening in these local wars or to defeat the United States locally if it does.

In these local wars, nuclear overmatch against the United States is hardly necessary. Instead, China is more concerned with preventing U.S. nuclear coercion and intervention and constraining the scope of any war that may erupt. PLA strategists appear to believe that the United States would not intervene in a conflict that did not directly threaten the United States if there was a risk that the conflict could escalate to the nuclear level.15 As Zhao Xijun, former deputy commander of the Second Artillery Force, has said, states “become very cautious” when contemplating military intervention against other nuclear-armed states.16

Evidence suggests that a secure second-strike force may even embolden the PLA in local conventional conflicts, allowing them to accept greater risks at lower levels of escalation. That especially holds true when considering that all sides in China’s multiple territorial claims perceive themselves as defending the status quo.17 Research has revealed the PLA’s overconfidence in its ability to control conventional escalation. Unlike in the case of nuclear weapons, Chinese documents emphasize “seizing the initiative” early in conventional conflicts. They envision using tools such as cyberwarfare and conventional missiles early, hard, and fast, even preemptively.18 Although the focus of these writings is not nuclear weapons use, conventional operations could be emboldened by perceptions of nuclear stability.

Entanglement Risks

Another complication is that firebreaks between conventional and nuclear forces are increasingly blurred in modern warfare, and substantial risks exist when conventional strategies affect nuclear forces. One notable example involves discussions on space weapons. PLA assessments have highlighted the increasing importance of this domain, and the asymmetric weakness represented by U.S. overreliance on space in conflict. Critiques of Chinese military writings point toward the offense-dominant nature of such operations and the need to control the space domain early in conflict. They further assert that attacks against U.S. satellites would carry relatively low escalation risks and could even deescalate a conflict.19

U.S. satellite systems, however, are dual use, enabling a wide range of conventional and nuclear operations. Attacks against U.S. satellites would not only affect the country’s conventional capabilities, they would jeopardize the heart of the U.S. nuclear command, control, and communications and early-warning capabilities.20 Further, although Chinese military analysts highlight the advantages of engaging in satellite attacks during conventional conflicts, the same actions would likely be taken prior to a nuclear conflict in order to degrade the effectiveness of U.S. missile defenses and ensure the effectiveness of a nuclear strike. As a result, Washington would view any Chinese attack on its satellites as profoundly destabilizing, potentially inciting a U.S. nuclear response.

Similar entanglement risks exist with Chinese forces. PLARF bases all appear to host conventional and nuclear missile brigades. These are geographically separated from each other, but most of the weapons are on mobile platforms, creating overlapping risks when deployed. Conventional and nuclear forces seem to rely on the same supply and logistics infrastructure. Although command and control infrastructure are ostensibly separate, the extent of this separation is not fully understood, and overlap seems likely to exist.21 Additionally, China’s nuclear submarine force appears to share the same onshore communications systems with Chinese conventional submarines.22

Furthermore, an increasing number of mid-range to intermediate-range weapons systems are dual use. Although the DF-21 maintains distinct conventional and nuclear variants that are typically not co-located, they are likely indistinguishable when deployed. In the case of the DF-26, conventional and nuclear warheads are likely co-located. Reports have highlighted DF-26 brigades, equipped with conventional and nuclear weapons, that hold drills in which units launch a conventional attack and then reload with a nuclear warhead to prepare for nuclear counterattacks.23

In conflict, attacks against China’s shore-based communications systems that are directed at China’s conventional submarine force would cut off its nuclear-armed submarine force as well. Campaigns against China’s vast conventional missile force would almost certainly degrade China’s nuclear force too. The fixed bases supporting PLARF brigades would be likely targets as the dual nature of these bases means conventional and nuclear forces share the same base headquarters, resulting in severed communications and logistics networks for PLA nuclear forces. Even if China’s nuclear and conventional command and control networks were sufficiently separate, it would be challenging to distinguish between them. Conventional and nuclear midrange to intermediate-range weapons would likely be indistinguishable in conflict.

How would China respond to attacks against these dual-use systems and the degradation of its nuclear force? It is somewhat comforting that China’s ICBM force is relatively distinguishable from its dual-use weapons, and the majority of the force is located deeper within the Chinese mainland. What is not obvious is how strikes against regional-range nuclear forces would be perceived by Beijing in the middle of armed conflict. If China’s nuclear forces were degraded in any way, authorities could conclude that they no longer have a survivable deterrent. In the heat of a conflict, it is difficult to assess how Chinese decision-makers would react to this.

Further, a degraded Chinese nuclear force, in the middle of a crisis, could provide a tempting counterforce target for the United States. In such a case, there would be a challenge of perceptions, with neither the United States nor China truly knowing the other’s intentions. In conflict, with the ability to destroy China’s nuclear force or at least limit damage to itself should China opt for nuclear use, would the United States decide that a counterforce strike is worth the risk? The United States would understand that if it failed to strike, China could opt to use its remaining nuclear forces and inflict substantial damage. Similarly, knowing the United States faced such a dilemma and that it could face a disabling counterforce strike, China would be faced with strong use-it-or-lose-it pressures. All of these circumstances would be exacerbated by the fog of war, a degraded information environment, and the speed required to make decisions.

Some Western analysts have speculated that China’s conventional and nuclear weapons capabilities have been intentionally entangled to heighten the risks facing adversaries and to deter conflict. There is little evidence that this was a motivator. Instead, the PLA likely sought to take advantage of economies of scale. It is far cheaper and more logical for China to use the same designs for conventional and nuclear variants to its weapons, allowing for savings on manpower, production, maintenance, and research costs. Even so, this is hardly comforting and may leave the PLA less aware of risks resulting from a comingled system. States that entangle forces intentionally are likely better prepared for the risks involved. When such entanglement arises from nonstrategic reasons, as seems likely in China’s case, states are less aware of the escalatory risks, which may exacerbate escalatory pressures in a conflict.24

War Control and Inadvertent Escalation

There is little evidence that technological entanglement is a direct, strategic choice, but there are some limited indications that China could use nuclear signaling to constrain the extent of conventional conflicts and contribute to escalation control.25 Nuclear signaling includes such actions as test launches, release of the locations of targets, an increase in readiness levels, missile deployments, or other actions to demonstrate resolve. The goal would not be necessarily to use nuclear weapons. Instead, the signaling would aim to raise fears that a conflict could credibly escalate to the nuclear level, thus “causing the enemy to dread that the possible consequences of its actions will be that its losses will exceed its gains, thereby causing the enemy to change its plans for risky activities and achieving the goal of restricting the war to a certain scope.”26 In this way, China could capitalize on the uncertainty of a potential nuclear conflict to deter intervention and constrain escalation in conventional conflicts in the Pacific region. Such risks are compounded by China’s use of purposeful ambiguity as an integral component of its approach to nuclear deterrence.27

One major problem is that such signaling by the Chinese may be indistinguishable from preparations for a nuclear attack. Yet, writings by experts on deterrence and signaling operations fail to acknowledge that these provocative actions could be misinterpreted by an adversary. In general, Chinese experts seem to believe that nuclear escalation is unlikely to be effectively controlled, but are overconfident that conventional conflict can be controlled without escalating to the nuclear level.28 Lack of awareness about escalation risks could very well make the PLA more aggressive in local conflicts.

Finally, the concept of an “existential threat” may be different in China than many perceive it to be. The PLA is not China’s professional military so much as it is the armed wing of the Chinese Communist Party, a point drilled into PLA members and emphasized in the era of Chinese President Xi Jinping, who is also general secretary of the party.29 In that sense, destruction of the party may be synonymous with destruction of the state. Such conflation of ideas could come into play in the face of a humiliating conventional defeat by China over Taiwan or another dispute that China considers central to its sovereignty. If there were a perceived risk, irrational or not, that such losses could fracture the legitimacy of the Communist Party, drastic actions could become more likely. If Beijing perceived that nuclear weapons use would ensure victory in a conflict, it might escalate to using nuclear weapons in a last-ditch effort.

Conclusion

For all the concern from U.S. policymakers about China’s nuclear expansion, relatively little attention has gone into adequately examining the country’s military and nuclear strategies. There is a tendency among many U.S. policymakers to blindly equate the challenge of China with the strategies faced by the United States and the Soviet Union during the Cold War or to mirror image their own strategic thinking onto Chinese strategists. That is insufficient and dangerous.

China’s thinking on escalation and war-fighting often differs substantially from that of the Americans and Soviets. The authoritative literature on these subjects within the Chinese system does not represent errant thoughts of lone strategists. It represents doctrinally informed guidance that culminates the work of dozens of China’s top strategists, originating from China’s most authoritative institutions with ties directly to China’s decision-making bodies, and is used to educate and inform PLA officers. Although written for an internal audience, several of the most important of these texts, such as “Science of Military Strategy” and “Science of Campaigns,” have been translated into English by U.S. scholars and need to be mined thoroughly by U.S. planners for insights.30

There is also a need for greater engagement and crisis management measures between U.S. and Chinese officials. Varying levels of formal and informal dialogues between Chinese and U.S. officials directly or between delegations of recently retired officials help alleviate misperceptions and enhance understanding of escalation triggers and redlines. Although there have been some talks at the unofficial level in recent years, Beijing remains reluctant to pursue official talks on nuclear weapons. Given the substantial misperceptions in the relationship, regular engagements are critical. Similarly, crisis management mechanisms would be to the advantage of both sides in communicating intentions and alleviating misperceptions during a crisis. Thus far, the pursuit of new initiatives has met limited success, and Beijing tends to eschew the methods that are in place. Although arms control agreements appear to be unfeasible between the United States and China for the time being, official talks and better crisis management measures would be a strong first step.

Finally, the United States needs to look at deterrence and escalation more holistically. The primary risks of nuclear escalation stemming from the U.S.-Chinese relationship do not come from nuclear weapons alone. Warfare is increasingly complicated; a greater appreciation of how conventional and nuclear strategies intersect is needed. In the Indo-Pacific theater, conventional forces may play a greater role in deterrence than many in the nuclear community acknowledge. U.S. Admiral Phil Davison, commander of the U.S. Indo-Pacific Command, recently observed that “the greatest danger the United States and our allies face in the region is the erosion of conventional deterrence vis-à-vis the People’s Republic of China.” Increasingly, this erosion affects conventional and nuclear strategies. Organizational separation within the U.S. military establishment may leave conventional and nuclear planners ill-informed of escalation risks stemming from areas outside their purview. Better integration of conventional and nuclear communities, a more holistic understanding of the risks and challenges, and a bolstering of regional conventional forces could play a significant role in managing and deterring conflict that could otherwise escalate to the nuclear level.

#### BUT, only by enabling neo-Schumpeterian competition can the US maintain dominance:

#### 1. Competition---it prevents the blocking of deployment, the collapse of defense innovation, AND circumvents Chinese theft and coercion.

Ganesh Sitaraman 20, Professor of Law at Vanderbilt Law School, "Too Big to Prevail," Foreign Affairs, March/April 2020, https://www.foreignaffairs.com/articles/2020-02-10/too-big-prevail.

When executives at the biggest U.S. technology companies are confronted with the argument that they have grown too powerful and should be broken up, they have a ready response: breaking up Big Tech would open the way for Chinese dominance and thereby undermine U.S. national security. In a new era of great-power competition, the argument goes, the United States cannot afford to undercut superstar companies such as Amazon, Facebook, and Alphabet (the parent company of Google). Big as these companies are, constraints on them would simply allow Chinese behemoths to gain an edge, and the United States would stand no chance of winning the global artificial intelligence (AI) arms race. That technology executives would proffer these arguments is not surprising, but the position is gaining traction outside Silicon Valley; even Democratic politicians who have been critical of Big Tech, such as Representative Ro Khanna of California and Senator Mark Warner of Virginia, have expressed concerns along these lines.

But the national security case against breaking up Big Tech is not just weak; it is backward. Far from competing with China, many big technology companies are operating in the country, and their growing entanglements there create vulnerabilities for the United States by exposing its firms to espionage and economic coercion. At home, market concentration in the technology sector also means less competition and therefore less innovation, which threatens to leave the United States in a worse position to compete with foreign rivals. Rather than threatening to undermine national security, breaking up and regulating Big Tech is necessary to protect the United States’ democratic freedoms and preserve its ability to compete with and defend against new great-power rivals.

DESTINATION: CHINA

Competition with China will define U.S. national security conversations for decades to come, and Americans need to think carefully about the role technology will play in this increasingly competitive environment. But to claim that the likes of Amazon and Google are helping counter China’s technological and geopolitical rise simply because they are American companies makes little sense.

Almost all big U.S. technology companies have extensive operations in China today. Google announced plans for an AI research center in Beijing in 2017 and is exploring a partnership with the Chinese Internet behemoth Tencent. Microsoft is expanding its data centers in China and has recently built an entire operating system, Windows 10 China Government Edition, for the Chinese government. Amazon’s cloud service in China is second in popularity only to that of its Chinese counterpart, Alibaba. Apple famously designs its phones in California but manufactures them in China. Facebook, notably, does not operate in China—but not for lack of trying. The company repeatedly attempted to gain access to the Chinese market only to be blocked by Chinese government officials.

Merely operating in China may seem harmless. Yet according to scholars, U.S. government officials, and even American business associations, any U.S. technology company working in China could very well be supporting the Chinese state and the expansion of digital authoritarianism. In the course of their operations in the country, U.S. companies routinely interact with Chinese companies, some of which are run or partly owned by the state. Those that are not still have informal ties to state and Communist Party officials and face strong incentives to behave as the state wishes even without direct pressure from the government. Because the Chinese market and the state are intertwined in this way, Chinese companies that partner with foreign ones are highly likely to pass along operational and technological developments to the Chinese government and military, including in ways that could advance Beijing’s emerging surveillance state and accelerate its ability to spread its model of digital authoritarianism around the world.

These challenges are particularly clear in the case of AI, as commercial innovations in that field can also have military implications. Under Beijing’s doctrine of “civil-military fusion,” Chinese researchers and private companies are working ever more closely with the government and the military, which means that technological innovations that may have originated with a foreign company active in China can find their way to supporting the People’s Liberation Army. “If you’re working in China,” Ashton Carter, a former U.S. defense secretary, has said, “you don’t know whether you’re working on a project for the military or not.”

In addition to widely known concerns about Chinese espionage and surveillance, integration with the Chinese market also opens Big Tech—and the United States—to pressure from China, which can use that influence to hurt U.S. interests. Scholars refer to this tactic—turning economic interdependence into political leverage—by a variety of terms, including “geoeconomics,” “reverse entanglement,” and “weaponized interdependence.” Whatever it’s called, China has a long track record of doing it, across countries and industries. To retaliate against South Korea’s adoption of a U.S. missile defense system in 2017, China blocked Chinese travel agencies from offering trips to the country. And after the dissident Liu Xiaobo was awarded the Nobel Peace Prize in 2010, China temporarily blocked imports from Norway.

To avoid offending Chinese officials and potentially losing access to the country’s large market, companies are adapting their behavior even outside China’s borders. Hollywood studios have been accused of rewriting scripts and editing scenes for that purpose: choosing to blow up the Taj Mahal instead of the Great Wall of China in the movie Pixels, according to Reuters, and replacing China with North Korea as the main adversary in the 2012 remake of Red Dawn, according to the Los Angeles Times. In 2019, Daryl Morey, the general manager of the NBA basketball team the Houston Rockets, tweeted in support of pro-democracy protesters in Hong Kong; soon thereafter, he deleted the post. In the days that followed, the owner of the Rockets wrote that Morey did “NOT speak” for the team, and the NBA said it was “regrettable” that Morey’s views had “deeply offended many of our friends in China.” (After a public outcry, the NBA clarified that it would not censor or fire Morey.) A year earlier, Mercedes-Benz had posted a quote from the Dalai Lama on Instagram. After an online backlash in China, the automaker quickly erased the quote, and its parent company, Daimler, said that the post had contained an “erroneous message” and had “hurt the feelings of people” in China. The People’s Daily, China’s largest newspaper, later branded Mercedes-Benz as an “enemy of the people.”

Such conduct by Western companies illustrates a broader point: they act based on their commercial interests, not in the name of abstract democratic principles or for the cause of U.S. national security. The same is true when these companies try to influence government policy. The potential stakes are high. The U.S. Department of Commerce, for instance, has the power to set export restrictions on some sensitive technologies, including AI; those restrictions may be important from a national security standpoint, even if they negatively affect some companies’ bottom lines. Yet the dominant ideology among corporate lawyers today holds that the sole aim of managers is to maximize shareholder profits, and corporate lobbyists are thus likely to advocate public policies that support those profits even if they run counter to U.S. national interests.

Practically all U.S. companies active in China are subject to such pressures to one degree or another, and how to address that predicament is another question altogether. But the size and dominance of American technology companies are part of the problem. As the U.S. technology sector becomes more concentrated and the few players in it become more dependent on the Chinese market for consumers and profits, these firms—and, by extension, the United States—become more vulnerable to pressure from Beijing. Antimonopoly policies could help remedy this problem: in a fractured market with many players, the sheer number of firms would all but guarantee that some would build supply chains that circumvented China, or build their products wholly in the United States, or simply choose not to engage in the Chinese market—whether because of idiosyncratic preferences, competitive dynamics, product differentiation, higher costs, or other factors.

Consider another industry whose structure resembles that of Big Tech: Hollywood. Like the technology industry, today’s entertainment sector consists of a handful of studios that are increasingly dominant at the box office and able to pressure theaters to give their content preferential treatment. If these big, integrated companies comply with Chinese censors out of a concern for market access, then U.S. consumers will not see content that offends the Chinese government. By contrast, in a system with a large number of small studios and competitive distribution channels, many companies would lack the size, scope, or desire to cater to the Chinese market, let alone be dependent on it. Nor would they have the power or scale to lock out new competitors through vertical integration. The result would be a market in which Americans had a range of content choices, including entertainment that might not accord with the views of foreign censors.

Of course, in theory, it is possible that a small number of big U.S. technology firms, each with monopoly-like power, might be so profitable as to have no need for the Chinese market, whereas small companies with razor-thin profit margins might depend more on that market for consumers and profits. But this hypothesis has not been borne out. The current technology sector is already highly concentrated, and yet today’s technology companies are not forsaking the Chinese market; instead, they are desperate to expand their business there.

As they do so, they will likely be subject to the same pressures bearing down on Hollywood, the NBA, Mercedes, and other entities that want to operate in China. Companies such as Amazon and Google, which both produce their own content and distribute it through their platforms, may over time be tempted to make that content palatable to Chinese censors. And because those firms have immense market power within the United States, American consumers will be left with no serious, scalable alternatives.

A more competitive technology sector, with many smaller players, would also mitigate the ill effects of lobbying, for much the same reasons. Fewer companies would be dependent on the Chinese market, and those that were would be differentiated enough to often end up on different sides of policy debates. Their lobbying efforts would be less likely to cut in a single direction and thus less likely to capture government.

THE VIRTUE OF MONOPOLY

Big Tech’s market dominance, some will argue, has benefits: free of constant worries about vicious competition, technology giants can focus on the big questions. They have the time and resources to invest copiously in cutting-edge research, where success is rare but the potential payoff—for technological innovation and thus for U.S. competitiveness and national security—is massive.

Whether or not they say it explicitly, those who want to protect Big Tech from antitrust laws and other regulations are advocating a “national champions” model—a system in which the state shields a few select big companies from competition, allowing them to spend on research and development. But there is strong evidence that this approach is imperfect, at times even counterproductive. As the legal scholar Tim Wu has noted, it is usually competition, not consolidation, that fosters innovation. Competitors have to find ways to differentiate themselves in order to survive and expand. Large, protected firms become lethargic, are slow to innovate, and rest on their laurels.

Recall the race for supremacy in the electronics industry that played out between the United States and Japan in the 1980s. Japan, according to Wu, chose to protect its national champions, giving direct government support to such powerhouses as NEC, Panasonic, and Toshiba. The United States took the opposite tack. Its largest electronics firm at the time, IBM, came under antitrust scrutiny by U.S. authorities, and the ensuing decade-long legal battle discouraged the company from engaging in conduct that might run afoul of antitrust laws. That created the space for a variety of other hardware and software companies, among them Apple, Lotus, and Microsoft, to flourish. Competition led to innovation and the creation of some of the most forward-looking companies of the era.

National champions also have an incentive to hide breakthroughs that might undermine their market power. Bell Labs, one of the pillars of AT&T’s telecommunications empire, has long been celebrated for its role as an “ideas factory.” But Bell Labs and AT&T also suppressed innovations that threatened their business model. Starting in the 1930s, for example, AT&T’s management sat on recording inventions that could have been used for answering machines, for fear this innovation might jeopardize the use of the telephone.

Skeptics might argue that this time is different—that today’s next-generation technologies are so resource-intensive that smaller companies in a competitive environment couldn’t afford the necessary investments. But even if broken up and regulated, Big Tech’s main players would have considerable money left to spend on AI, robotics, quantum computing, and other next-generation technologies. Facebook would still have billions of users without Instagram and WhatsApp. Amazon’s platform would still have enormous market power in online sales even if it wasn’t allowed to produce its own products.

Whatever resource constraints did arise could be offset by greater public investment in R & D. As the economist Mariana Mazzucato has argued, such government spending has historically been a significant driver of innovation; the Internet, for example, began as a U.S. Defense Department network. There is no reason the government could not play the same role today.

Unlike research by national-champion firms, research funded by public investment would not be tied to the profit motive. It could therefore cover a wider range of subjects, extend to basic research that does not have immediate or foreseeable commercial applications, and include research that might challenge the incumbency and business models of existing companies. Public research could also de-emphasize areas of inquiry that may be profitable but are socially undesirable. For many of the biggest technology companies, surveillance, personalized targeting, and the eliciting of particular behavioral responses lie at the heart of their business models, which means that their efforts to innovate are geared in no trivial way toward improving those tactics. An authoritarian country may see those as valuable public goals, but it is not at all clear why a free and democratic society should.

Public investment in R & D also has the potential to spread the benefits of technology, innovation, and industry throughout the United States. At present, much of the country’s technological and innovative prowess is concentrated in a few hubs—the most prominent being Northern California, Seattle, and Boston. This is not surprising, as unlike the government, technology companies have no reason to want to spread development evenly. Amazon’s competition to decide the location of its second headquarters is a good example. After inviting countless pitches from cities across the country and much public attention, the company settled on New York and Washington, D.C.—two cities that hardly need an economic boost. Public investment, as the economists Jonathan Gruber and Simon Johnson have argued, could remedy these geographic imbalances and spur successful economies in dozens of midsize cities all over the country, with spillover benefits for their regions.

Mountains of data are needed to improve AI’s precision and accuracy, and some might think that only Big Tech can collect and handle data in such vast quantities. But this need not be the case, either. The United States could create a public data commons with data collected from a variety of government sources (and regulate it with strict rules about personal privacy), for use by businesses, local governments, and nonprofits to train machines. Any new data would be fed back into the data commons, allowing the quality and quantity of the information to improve over time. Alternatively, the government could require technology companies to make their data available in interoperable formats. If those companies effectively have monopoly power over data, then they could be regulated as monopolies—with public access to the data sets as a condition for their continued protection as monopolies. No legal obstacles stand in the way of these options, and both would enable innovation and expand the number of players working on important technological developments.

SQUEEZING THE GOVERNMENT

For the moment, such public initiatives exist only as proposals. Big technology companies have considerable market power, and the U.S. government increasingly relies on their services, including to run its national security apparatus. Technology is, of course, a crucial aspect of warfare, and firms such as Amazon and Microsoft have contracts to provide cloud services to U.S. defense and intelligence agencies. These technology companies are fast becoming part of the United States’ defense industrial base—the collection of industries that are indispensable for U.S. military equipment. As they do so, the curse of monopoly capitalism that already affects the country’s overconsolidated defense sector—causing higher costs, lower quality, reduced innovation, and even corruption and fraud—will likely grow worse.

To see the challenge ahead, consider the present state of the U.S. weapons industry, which is already remarkably uncompetitive. In 2019, the Government Accountability Office found that 67 percent of 183 contracts for major weapons systems did not have a competitive bidding process. Almost half the contracts went to one of five companies—a stunning testament to the dominance of a handful of firms. And in 2018, the Defense Department released a report on the military’s supply chain that listed numerous items for which only one or two domestic companies (and in some cases none) produced the essential goods. Perhaps most striking of all, the report found that the United States no longer had the capacity to build submarines on a rapid timetable because of single suppliers and declining competition.

Unsurprisingly, as Frank Kendall, a former head of acquisitions at the Pentagon, has pointed out, large defense contractors “are not hesitant to use this power for corporate advantage.” In a recent article in The American Conservative, the researchers Matt Stoller and Lucas Kunce argue that contractors with de facto monopoly at the heart of their business models threaten national security. They write that one such contractor, TransDigm Group, buys up companies that supply the government with rare but essential airplane parts and then hikes up the prices, effectively holding the government “hostage.” They also point to L3 Technologies, a defense contractor with ambitions, in the words of its one-time CEO, to become “the Home Depot of the defense industry.” According to Stoller and Kunce, L3’s de facto monopoly over certain products means that it continues to receive lucrative government contracts even after it admitted in the settlement of a 2015 civil fraud lawsuit that it had knowingly supplied defective weapons sights to U.S. forces.

As technology becomes more integral to the future of U.S. national security, Big Tech’s market power will likely lead to much the same problems. Technology behemoths will amass defense contracts, and the Pentagon will be locked into a state of dependence, just as it is currently with large defense contractors. Instead of healthy innovation, the government will have created what Michael Chertoff, a former homeland security secretary, has called a “technological monoculture,” which is unwieldy and vulnerable to outside attack. The cost to taxpayers will increase, whether due to higher prices or fraud and corruption, and much of their money—funding that could have been available for innovation—will become monopoly profits for technology executives and shareholders.

#### 2. Dynamism---only by ensuring lagging incumbents AND potential entrants can compete will lock-in any productivity gains.

James Manyika & Michael Spence 21, Chair and Director of the McKinsey Global Institute; Philip H. Knight Professor and Dean Emeritus at Stanford University's Graduate School of Business, "A Better Boom: How to Capture the Pandemic’s Productivity Potential," Foreign Affairs, Vol. 100, No. 4, August 2021, HeinOnline. language edited.

The pandemic did more than temporarily [freeze] ~~paralyze~~ the global economy, however. It spurred businesses in practically every sector to radically rethink their operations, often accelerating plans for technological and organizational innovation that were already in the works. Overwhelmingly, firms adopted new digital technologies that enabled them to continue doing business even under severe coronavirus restrictions. The result was a profound economic transformation, one that has hastened the potential for productivity gains even in sectors that have historically been slow to change. In health care, for example, telemedicine had long promised new efficiencies and added value, but it was not until the COVID-19 crisis that it took off. In retail, with the exception of e-commerce players, firms had been slow to adopt digital sales strategies, doing so mostly as a way to complement Main Street retailing. That changed rapidly with the pandemic.

Surprising as it may seem, out of the deepest economic crisis since World War II could come a new era of productivity gains and prosperity. Whether that happens will depend largely on the decisions that governments and businesses make as they prepare to exit the pandemic in the coming months. In the short and medium term, the prospects for increased productivity—and prosperity—are encouraging, as the United States and other countries spend heavily on economic recovery and businesses reap the benefits of digitization. But the outlook is less optimistic over the long term, since governments cannot spend indefinitely and consumer and investment spending may not fill the gap.

Governments and businesses must therefore seek to create the conditions for sustained productivity growth and prosperity, in particular by facilitating the diffusion of technological and organizational innovations and bolstering consumer demand. Out of a major global crisis could come a major jolt of productivity growth—but only if policymakers and business leaders make the most of this moment.

THE PRODUCTIVITY PARADOX

The history of productivity growth can be understood as a succession of technological revolutions, from the steam engine to the computer. Each offered the promise of accelerated productivity and economic growth, and each eventually delivered. But there has often been a delay between innovation and adoption, and another between adoption and economic impact. The economist Robert Solow summed up these apparent discrepancies in a 1987 article in The New York Times Book Review, writing, “You can see the computer age everywhere but in the productivity statistics.” His formulation became known as “the Solow paradox.”

But then came the revolution in information and communication technologies between 1995 and 2005, a decade in which the Solow paradox was temporarily resolved. Widespread adoption of these technologies was accompanied by a simultaneous acceleration in productivity, which grew at an annualized rate of 2.5 percent in the United States, a full percentage point faster than the rate between 1970 and 1995. Companies invested heavily in information and communication technologies and reorganized their operations and managerial practices around them. They did so out of the desire to gain a competitive edge, but also because of relatively robust consumer demand for their products.

Productivity growth accelerated in several sectors as a result, driving growth in the U.S. economy as a whole. This period was characterized by an unusual combination of large spurts in productivity growth in a few big sectors employing many workers, such as retail and wholesale, and even larger productivity growth in smaller sectors, such as those that produced computers and electronic products. In both big and small sectors, there was a virtuous cycle of employment growth to meet demand and even faster growth in the value of the output from these sectors. The value of outputs across all sectors of the economy grew by 3.4 percent per year between 1995 and 2005, whereas the total number of hours worked grew by only 0.9 percent per year.

But the boom did not last. Between 2005 and 2019, annual productivity growth in the United States fell by more than half, to 1.0 percent. In the aftermath of the 2008 global financial crisis, from 2010 to 2019, it was even lower, at 0.6 percent. Unlike the United States, European countries had not experienced rapid productivity gains in the 1995–2005 period, but they did experience the postcrisis decline. Between 2010 and 2019, annual productivity growth fell below one percent in France, Germany, and the United Kingdom.

The Solow paradox was back. After a decade of rapid productivity gains, the information technology revolution had reached a point of diminishing returns. But the next wave of technology—the digitization of processes, big data and analytics, cloud computing, the Internet of Things—was not yet ready to fill the gap. Despite early breakthroughs in image recognition and natural language processing, few firms had begun to make use of artificial intelligence technologies, and digitization was proceeding slowly. We estimated, based on a sector-by-sector assessment, that in 2015, the United States had reached only 18 percent of its digital potential and Europe had reached only 12 percent. Moreover, a gap had opened up between the firms that were digital leaders and those that were digital laggards—a gap that other researchers found was correlated with a gap in labor productivity.

This gap in technology adoption was widening at a time of weak consumer demand for goods and services, in large part due to the aftereffects of the financial crisis. Firms scaled back their investments, and fewer new businesses were created. Making matters worse, the share of income that flowed to top earners and the owners of capital increased, while the share that went to labor decreased, further weakening demand.

Across the United States and Europe, the vast majority of sectors experienced declines in productivity growth. Only four percent of all sectors recorded productivity jumps in 2014, compared with an average of 18 percent of sectors that achieved substantial increases in productivity in the previous two decades. Growth in gross value added—a measure of a firm’s or a sector’s contribution to GDP—declined from 3.4 percent annually between 1995 and 2005 to 1.8 percent between 2005 and 2019. Growth in hours worked remained roughly unchanged, at 0.7 percent, throughout both periods.

These two very different periods of economic activity in the United States reveal much about the underpinnings of productivity growth. It stems first and foremost from the widespread adoption of technological innovations, especially general-purpose technologies such as electricity and the Internet. But it also stems from the managerial innovation and reorganization of functions and tasks that occur when firms adopt new technologies. Both of these processes must spur leaps in productivity growth in many sectors, or at least in a few large ones, so that productivity jumps in the economy as a whole. Finally, adoption and reorganization within and across sectors must be driven by competition, which incentivizes firms to innovate and helps spur technological diffusion.

Not all productivity growth is created equal, however. Productivity growth can be achieved through gains in the volume or value of outputs for a given number of hours worked, or it can come about as a result of a reduction in hours worked for a given output. Often both happen at the same time. But it is when the former exceeds the latter that a virtuous cycle is created in which innovation and investment generate growth in employment and wages, which in turn generates demand for increased (or more valuable) output. This is what happened during the period from 1995 to 2005. When the latter source of productivity growth exceeds the former, however, a vicious cycle results in which firms reduce labor costs faster than they grow the volume or value of their outputs, which in turn puts pressure on employment and incomes.

POST-PANDEMIC POTENTIAL

The pandemic has primed advanced economies for another period of rapid productivity growth. It is too early to say for sure whether such growth will be the product of a virtuous or a vicious cycle, but signs point to the former. Despite uncertainty, stress, and plummeting economic activity in the early days of the COVID-19 crisis, many firms boldly deployed and used new general-purpose technology—especially digital technology—in ways that have driven virtuous productivity gains in the past. In October 2020, we surveyed 900 C-suite executives in various sectors and countries and found that many had digitized their business activities 20 to 25 times as fast as they had previously thought possible. Often, this meant shifting their businesses to online channels, since roughly 60 percent of the firms we surveyed experienced a significant increase in customer demand for online goods and services as a result of the pandemic.

Before the pandemic, e-commerce was forecast to account for less than a quarter of all U.S. retail sales by 2024. But during the first two months of the COVID-19 crisis, e-commerce’s share of retail sales more than doubled, from 16 percent to 33 percent. And that growth did not just reflect brick-and-mortar firms setting up shop online for the first time. Firms that were already highly digitized before the pandemic significantly expanded their online capabilities to meet the surge in demand. They also reorganized their operations, including their logistics, to complement what they were doing digitally—for example, by expanding their direct-to-home delivery capabilities.

Businesses also strove to become more efficient and agile. In Europe and North America, nearly half of the respondents to our survey said that they had reduced their operating expenditure as a share of revenue between December 2019 and December 2020. Two-thirds of senior executives said they had increased investment in automation and artificial intelligence, whether to help warehouse and logistics operations cope with higher e-commerce volumes or to enable manufacturing plants to meet surging demand. Many companies used technology to reduce the physical density of their workplaces or to enable contactless service—for instance, by expanding self-checkout in grocery stores and pharmacies and employing online ordering apps for restaurants and hotels. Other businesses, such as meatpacking and poultry plants, accelerated the deployment of robotics to reduce their need for labor. If there was one lesson from the pandemic, it was that digital capability and resilience go hand in hand.

But even as the arrival of vaccines has made it possible to imagine a return to relative normalcy in parts of the developed world, continued digitization and the adoption of other technological innovations promise to deliver still more productivity gains. The largest of these gains—roughly an additional two percentage points per year—could come in the health-care, construction, information technology, retail, pharmaceutical, and banking sectors. In health care, for instance, accelerating the use of telemedicine beyond the pandemic could drive incremental productivity growth for years. According to one recent U.S. poll, 76 percent of patients expressed interest in using telemedicine in the future, and industry experts project that the services for 20 percent of health-care spending could be delivered virtually—up from 11 percent before the pandemic. Other sectors, including automotive, travel, and logistics, show less—but still substantial—potential for productivity growth as a result of more flexible task scheduling, leaner operations, and smarter procurement.

Overall, these innovations and organizational changes could accelerate productivity growth by around one percentage point per year between now and 2024 in the United States and the six large European economies that we analyzed (France, Germany, Italy, Spain, Sweden, and the United Kingdom). This gain would result in a productivity growth rate twice as high as the rate after the 2008 global financial crisis, and in the United States, it would expand per capita GDP by roughly $3,500 by 2024. That would be a stunning outcome, but it will hinge on continued technology adoption by firms and the maintenance of robust demand.

Even more productivity gains could be on the horizon thanks to other advancements. The accelerating revolution in biology, for instance, could transform sectors from health care and agriculture to consumer goods, energy, and materials. Biological innovation has already enabled the rapid development of new vaccines for COVID-19. Equally impressive revolutions in energy could make possible the widespread adoption of solar and wind power, especially in light of recent progress toward better (and cheaper) batteries. Artificial intelligence is also advancing rapidly, but is still a long way from being deployed widely across companies and sectors. When and if that happens, the productivity gains could be enormous.

FOLLOW THE DIGITAL LEADER

Future gains in productivity, even those that boost overall growth, are likely to be uneven. We analyzed metrics that have the potential to unleash future productivity growth—such as research-and-development spending, revenue, capital expenditures (including digital expenses), and mergers and acquisitions—and found that especially in the United States, a small number of large superstar firms accounted for a disproportionately large share of the activity in all these categories. From the third quarter of 2019 to the third quarter of 2020, U.S. superstars (defined as the top ten percent of firms by profit) saw much shallower declines in capital expenditures and revenue than did other companies. During the same period, U.S. superstars spent $2.6 billion more on R & D than they did the previous year, while all other firms spent just $1.4 billion more.

If this investment, innovation, and technology adoption gap between superstars and the rest of the large firms and smaller, less profitable firms persists, any post-pandemic acceleration in productivity growth could fall short of its potential. Small and medium-sized enterprises have been hit disproportionately hard by the COVID-19 crisis. As a result, many of them are unable to make big investments in future productivity and are therefore liable to fall even further behind the superstars. This is what happened in the aftermath of the 2008 global financial crisis, when only a minority of companies achieved productivity growth.

But there is room for cautious optimism about the ability of non-superstars to close some of the gap. Before the pandemic, the superstars tended to be highly digitized and innovative in their managerial approaches, as well as more profitable and resilient. They were therefore better placed to weather and even take advantage of the shock. But as the hardest-hit firms and sectors recover, and as early digital adaptors demonstrate the enormous potential of these technologies, many of the digital laggards could begin to catch up. Indeed, in another survey of executives we conducted in December 2020, about 75 percent of respondents in North America and Europe said they expected investment in new technologies to accelerate substantially between 2020 and 2024, up from 55 percent between 2014 and 2019. This expected uptick was similar across firm sizes.

Another reason for optimism is that in 2020, a year that saw the darkest economic days of the pandemic, 24 percent more new businesses were created in the United States than in 2019. Europe lagged behind the United States on this metric, with new business creation staying roughly flat in 2020 in France, Germany, and the United Kingdom and declining by more than 15 percent in Italy and Spain. If the American increase in business dynamism persists, however, it should contribute to more productivity growth.

Investment, innovation, and technology adoption are only one-half of the virtuous cycle of productivity growth, however. The other half is demand for the expanded output that results—in other words, income growth from increased productivity has to flow to people who will spend that additional money. In the short term, the outlook for demand is good, especially for countries that have made progress toward vaccinating their populations and could be among the first to open up their economies. Pent-up demand and savings from the pandemic could be unleashed all at once, resulting in a strong initial bounce in demand led by consumers. In the United States, President Joe Biden’s $1.9 trillion economic support bill should push demand even higher.

In the medium term, the outlook for demand is also relatively solid, although it will depend on the size, deployment, and longevity of government spending. In the United States, Biden now has set his sights on a large infrastructure package. As his administration shifts its focus from economic relief to investment in productive areas, it could also increase productivity growth by raising demand to match potential supply, creating a high-pressure economy, that is, one with low unemployment and high growth. The outlook in continental Europe, where large-scale government economic support is harder to coordinate, is less certain. Nonetheless, the EU has put in place an unprecedented plan totaling some $900 billion to boost investment in the digital and green energy transitions.

But government spending on this scale will likely be time-limited, making the long-term outlook for demand less rosy. Moreover, long-neglected problems, including the falling share of firms’ income going to workers, rising inequality, and the long-term decline in private investment, could drag down demand. Roughly 60 percent of the post-pandemic productivity gains that we estimate could come from innovations and organizational restructuring—the one percentage point of acceleration per year between now and 2024—would stem from firm-level measures, such as automation, designed to cut labor and other business costs. Unless firms do more to boost the volume or value of their output and help workers transition by acquiring new skills, the drive for efficiency will risk generating productivity gains through a vicious, rather than a virtuous, cycle, undermining wages and jobs and weakening consumption-driven demand and investment.

A NEW AGE OF DYNAMISM?

What can businesses and governments do to capitalize on the positive short- and medium-term outlook for productivity and to improve the long-term outlook? First, they should work to speed up technology adoption and managerial innovation, helping these changes spread within and across sectors. As the recovery begins, firms that have until recently been focused on crisis management and survival should follow the lead of superstar firms by investing in technology and reorganization. The superstars can assist in this process by supporting their broader ecosystems, in particular by doing business with smaller firms that offer complementary products and services. Governments can support the process, as well, by investing in research and development.

Policymakers should also seek to strengthen competition and business dynamism. In a healthy economy, the firms that add the most value prosper and grow, while the firms that add the least value shrink or disappear: so-called creative destruction. Policymakers can revive and reinforce this natural sorting process by revising competition rules, bankruptcy procedures, and product and labor-market regulations.

Governments and businesses should also aim to bolster demand and encourage business investment, the other half of the virtuous productivity cycle. As government spending tapers off, businesses should play their part by creating broad-based revenue growth while also finding efficiencies. Additionally, they should spend more on upgrading the skills of their employees, helping them make the most of technological and organizational innovations while also reducing inequality and unemployment. Governments can incentivize such investments in human capital through tax credits that encourage retraining and by shifting the tax burden away from labor income and toward capital income.

But productivity growth isn’t everything, especially as it is measured and projected today. It does not capture important dimensions of individual and social well-being that may be significantly augmented in the post-pandemic environment. For instance, the spread of digital technologies could foster more inclusive patterns of growth, and telemedicine could deliver timely primary health-care services to millions in the developing world. Nor do measures of productivity growth account for some of the negative externalities associated with modern innovations, which will compound over time and profoundly affect people’s quality of life.

What is perhaps most notable is that productivity as it is currently measured does not account for climate change. To mitigate that risk around the world, significant investment in technologies that make energy greener and more efficient is needed. Some of this investment will increase productivity growth. Electric vehicles, for instance, are not just good for the environment; they also require less labor to produce and so raise productivity. To the extent that energy-efficient investments divert resources and talent away from other, even more potentially productive areas of the economy, they could dampen short-term productivity growth. Over the long term, however, their effect will be positive, since they will prevent a dramatic decline in future productivity, among other catastrophic outcomes. Many of these gains may never be captured by the standard productivity measures, since the gains will represent a downturn that never occurred. But some of the productivity gains could eventually be captured, especially those related to infrastructure designed to help the economy adapt to climate change.

As they prepare to exit the pandemic, governments and businesses alike will have to balance these short- and long-term goals. Yet even now, as COVID-19 continues to exact a human and economic toll, a potential upside appears to be emerging. After years of sluggish productivity and economic growth following the 2008 global financial crisis, COVID-19 has triggered a frenzy of technological and organizational innovation. Whether this frenzy leads to a new age of dynamism will depend on what governments and businesses do to sustain a virtuous cycle of ever-greater productivity.

### 1AC---Realignment ADV

#### Contention 2 is Realignment.

#### The EU is gravitating towards stricter monopoly rules targeted at unilateral exclusion by large technology firms---BUT that creates a legal gap between the EU and US that creates room for diverging enforcement. Only by moving towards alignment AND coordinating with the EC (European Commission) can feasibly solve.

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Acquisitions of Nascent Competitors— A Similar U.S./Non-U.S. Dichotomy

The amount of ink spilled, and Zoom screens filled, on nascent acquisitions is beyond measure. But that does not mean it is easy to predict what the future holds. In fact, the discussions often center as much on purported past agency “mistakes” as on what to do now and going forward. Nor do all jurisdictions have agencies with the power and discretion to reach back and challenge prior nascent acquisitions; and for those that can, they do not all face the same legal standards.

In trying to sort out (below) the nascent acquisition landscape, we find great enthusiasm in the U.S. for fixing lost opportunities from the past—but with an unclear legal path—whereas in the EU merger clearance is final. Nonetheless, for all jurisdictions there is enormous appetite to address nascent acquisitions going forward.

U.S.: Enthusiasm, But What of the Case Law?

As with other areas of enforcement, the U.S. antitrust agencies cannot, absent judicial action, simply break up Big Tech by ordering it to spin off brands and business lines it acquired as start-ups. They must go to court and prove both a statutory violation and that divestiture is the appropriate remedy to restore competition (or that an injunction is the appropriate remedy if the deal is not yet consummated). There is precedent for seeking divestiture of past acquisitions that turn out to be anticompetitive (a subject beyond our scope), but its current application is far from clear. What we highlight here are some of the substantive issues presented under U.S. law for challenging acquisitions of nascent competitors, especially when seeking permanent injunctions or divestitures. These issues, among many others, will be front and center in several of the ongoing litigations.

As a starting point, anticompetitive acquisitions typically are the subject of challenge under Section 7 of the Clayton Act. Section 7 is an incipiency statute; it prohibits mergers whose effect “may be substantially to lessen competition.”21 The original notion was to prohibit anticompetitive mergers before their effects materialize, and to prohibit potentially anticompetitive horizontal, vertical, and conglomerate mergers. Beginning in the late 1970s, however, and continuing more dramatically in the 1980s and forward, the aggressive use of Section 7 was tempered by the agencies and the courts, which feared that the law was [preventing] handicapping efficient mergers. Today, Section 7 is most commonly invoked to challenge horizontal acquisitions of substantial competitors and, at times, vertical acquisitions that may foreclose competition from either upstream or downstream rivals to the harm of consumers. Under current U.S. case law, conglomerate mergers are tough to stop as are (most relevant here) acquisitions of potential competitors—where the target firm is not yet in the market of the acquirer, but may enter, and the market loses the benefit of the entry effect.

For acquisitions involving potential (or future) competition, the Supreme Court in United States v. Marine Bancorporation, Inc. established a tough evidentiary standard: (1) that absent the merger, the potential competitor could enter the market (as a de novo entrant), and (2) that such entry would structurally deconcentrate the market or produce other demonstrable procompetitive effects.22

A present market effect is also required when considering competitors waiting in the wings—the perceived potential competition doctrine. The standard may be a challenge for cases brought under Section 7, and the question now is whether a new line of Section 7 jurisprudence can emerge. For example, could Section 7 apply if a dominant firm forms a policy to acquire all start-ups that it identifies as significant future challengers, and thus builds a moat of protection around its alleged monopoly power? Or could the acquiring firm’s own assessment, prediction, and demonstrable intent provide the requisite inference and proof that each of the acquired start-ups could and would have entered (or expanded) on its own and offered consumer-enhancing rivalry in the market? Could the FTC also make a successful challenge under the more expansive language of Section 5 of the Federal Trade Commission Act? For all of these provocative questions, it will fall to the courts, and maybe eventually to the Supreme Court, to determine the outer boundaries of Section 7.

More immediately, as we see in some of the current litigated cases, the U.S. agencies have decided on a creative mix-and-match theory to challenge acquisitions of nascent competitors, using Section 2 monopolization principles (maintaining monopoly by acquiring competitive threats) for liability, while implicitly invoking Section 7 as the remedial basis for unwinding transactions. Here, the agencies have invoked language in Microsoft:

We may infer causation [of anticompetitive effects] when exclusionary conduct is aimed at producers of nascent competitive technologies as well as when it is aimed at producers of established substitutes . . . . [It] would be inimical to the purpose of the Sherman Act to allow monopolists free reign [sic] to squash nascent, albeit unproven, competitors at will . . . .23

The courts (particularly, now, in the Facebook litigation) will have to decide on the applicability of Microsoft to dominant platform acquisitions of small start-ups.24 On the one hand, courts will need to consider the alleged plan (supported by documents, in the government’s view) to stymie future competition and, on the other hand, the uncertain future of the start-ups at the time of an acquisition as compared with the actual dramatic growth and attractiveness to users of being a part of the platform’s network. While many of these principles are not new, the waters are uncharted in the courts. It will likely take years for the issues to work their way through the U.S. court system, including, in our view, likely action by the Supreme Court.

Finally, in the U.S., in theory there is always a prospect of regulation apart from courts’ antitrust decisions. But the prospect for regulation of acquisitions of nascent competitors is not necessarily rosy; it depends upon political will. Legislation may be especially challenging as the polarized factions of both the Republican and Democratic parties interact with a more moderate Democratic Executive (although one that is being advised by an aggressive progressive, Professor Tim Wu).25 If the politics align, especially with the Democrats’ new ability to garner support for legislation, the prospect of some rulemaking to proscribe dominant firms’ acquisitions of their nascent rivals under some conditions (and with new substantive standards) is not beyond question.

EU/U.K.: An Emerging Prophylactic Approach

Outside of the U.S., the enforcement and regulatory approach to nascent-competitor acquisitions is quite different—in part more restrictive, in part more flexible. On the restrictive side, unlike in the U.S., there is only “one bite at the apple” in the EU for blocking acquisitions with an EU dimension. Once a merger has received clearance from the EU it cannot be investigated again except in exceptional circumstances, such as whether the clearance was based on false or misleading information. This is why many jurisdictions are modifying their merger notification requirements to cover more (if not all) acquisitions by large tech (or other) firms. Equally important, the EU enforcers may not use Article 102 dominance law to block transactions, as the EC Merger Regulation is the exclusive regulatory authority.26 This precludes the hybrid approach currently asserted in the U.S. courts.

The flexibility is in the relative lack of constraining case law and the opportunity to explore new theories and approaches. Specifically, where the U.S. lower courts must grapple with the “potential competition doctrine” and the novelty of using Section 2 to attack consummated acquisitions, the EU and its Member States can explore new enforcement theories with few limiting parameters. Further, unlike with Articles 101 and 102, the Commission’s decisions on mergers are not frequently challenged, and even more rarely reach the Court of Justice. Hence, if the EU believes that a nascent-competitor acquisition by a dominant platform will be anticompetitive under one or more theories of harm, it may pursue that theory, subject to appeal to the General Court and Court of Justice. This provides significant flexibility and enforcement creativity.

Nor are non-U.S. jurisdictions encumbered by the Chicago School conceptions of consumer welfare that prevail in the U.S. (as applied in the merger context). Particularly in the EU and its Member States, therefore, we can anticipate a significant increase in scrutiny of all forms of nascent-competitor acquisitions based on relatively aggressive theories of harm to dynamic competition, coupled, as usual, with vigorous debate over the asserted harm and/or procompetitive justifications for the transaction.

The U.K., however, is likely to take an even more targeted approach to nascent acquisitions, consistent with its broad proposed regulation of large tech platforms. In contrast to the EU (which does not need a regulatory change to its merger review processes to address nascent acquisitions), the CMA has put nascent acquisitions directly in its new regulatory cross hairs. It apparently is more concerned with the growing power of the Big Tech platforms, even if there is a significant (sometimes large) chance that the “but for” competitive threat would never have materialized and the acquisition enhanced the offerings by the platform. As Andrea Coscelli, Chief Executive of the CMA, has highlighted, enforcers in his view need to get comfortable with the notion that the inherent uncertainty of the but-for world is still worth addressing.27 In essence, he is suggesting that competition is better preserved if the agencies take a dynamic and prophylactic approach to nascent acquisitions, a position that would be harder to argue and accept in the U.S. where inherent speculation is frowned upon in the case law both as a matter of liability and in seeking remedies, especially divestiture.

One can also anticipate, or at least prepare for, other jurisdictions to consider similar actions. The concern over nascent acquisitions by large tech firms is a recent and global one,28 and (rightly or wrongly) it appears that outside of the U.S. there may be relative convergence on these more interventionist approaches.

A General Surge in Populism, But Not Uniformity in Approach

Independently of a particular focus on tech platforms (and, primarily, the challenge of dealing with network effects), there is a drumbeat in the U.S. and elsewhere for more aggressively enforcing (or modifying) competition laws to address industry concentration and the power of individual firms.29 Whether referred to as Neo-Brandeisian or populism from a pre-Chicago School age, the thrust is similar: highly concentrated markets are said to lead to relatively higher corporate profits, wage disparity, barriers to entry, and decreased competitive opportunity. To address these perceived problems, the view is that antitrust needs to remove the constraints of a standard that proscribes only short-run, output-limiting, and price-raising conduct. Many in this group (whom we describe as Progressives) embrace a consumer welfare standard, but would apply it much more broadly and aggressively than conservatives.

Others (Neo-Brandeisians) would use consumer interests as one important focus of antitrust, but would widen the lens to consider exploitation of workers (beyond efficiency concerns), sustainability, inequality, and their perspective on democracy (freedom from business power that controls our lives). Moreover, their set of values leads to a policy position, sometimes more symbolic than actual, that seeks to break up Big Tech. For any of these objectives, particularly in the U.S., the question remains what is practical or feasible. Outside of the U.S., the more fundamental question is whether the Neo-Brandeisian debate is relevant given that in many jurisdictions competition law already is geared to control perceived power (although breaking up Big Tech has not seemed to be the first-line remedy).

In the U.S., the same limitations on case law/potential legislation dynamics are at play as with tech platforms, which may make the more aggressive proposals more aspirational than realistic. Every potential cause of action has its long-defined elements, and the consumer welfare standard that permeates theories of harm only has so much flexibility. For example, “abusive pricing” or “unequal bargaining positions” cannot be independent violations in the U.S.—separate exclusionary conduct would need to be present. Likewise, even in the merger space, market definition remains a requisite element that is probably not going to be jettisoned under current case law; whether concentration thresholds are likely to be reduced or burdens of proof shifted is a different question. For all of these long-established U.S. cases and theories, absent legislation, changes will be around the edges and incremental, as courts continue to determine how robustly the U.S. antitrust goals can accommodate such values as innovation, quality, and dynamic competition without crossing the boundaries into unreliable speculation.

While this continued iterative judicial process may add some flexibility under Section 2 and Section 7 (subject to the Supreme Court’s view), these limits will have significant effect. In the view of many, Section 5 of the Federal Trade Commission Act may have more flexibility if the FTC chooses to use it. But true “progressive” developments in the U.S. would require new legislation.

Looking forward, the House is likely to offer piecemeal legislation addressing specific areas of conduct or desired changes in the law.30 But the main focus for anticipated action should be on the Senate, as the new makeup of the Senate will likely shift the focus away from the aspirational House Majority Staff Report and onto the Senate Judiciary Subcommittee on Antitrust and Commerce, led by Senator Amy Klobuchar. Indeed, on February 4, 2021, Senator Klobuchar introduced a bill—the Competition and Antitrust Law Enforcement Reform Act—that would significantly modify Section 7 on mergers and Section 2 on monopolies (though not seeking to break up Big Tech).31 On mergers, the Act would forbid mergers that “create an appreciable risk of materially lessening competition,” where “materially” can be anything more than “de minimis.”32 It would also shift the burden of proof to the parties to disprove those effects for mergers that significantly increase concentration, involve nascent acquisitions by dominant firms (e.g., greater than 50 percent share), or involve mega mergers (over 5 billion dollars).33

As to unilateral conduct, the Act would expressly prohibit “exclusionary conduct,” defined to include any conduct that materially disadvantages competitors and presents an “appreciable risk of harming competition.”34 Again, this adopts a much more prophylactic approach than Section 2. On its face, the Act would appear to overturn Trinko, bring leveraging back into play (as well as a fairly open-ended theory of raising rivals’ costs), much like what we see in practice in the EU and elsewhere. Whether Senator Klobuchar’s bill will garner the needed votes (likely requiring 60) is hard to predict at this stage, but the general anger and frustration among some Republicans toward Big Tech (again, often concerning asserted platform-related censorship) may put many of them in a receptive frame of mind. From a competition policy perspective, and as Senate hearings begin on potential legislation, it is clear that Senator Mike Lee is the figure to follow on the Republican side.35

U.K./EU: More Flexibility, But How Far To Go?

In contrast to the U.S., other jurisdictions have significant flexibility in addressing whether and to what extent they wish to pursue a more progressive agenda for antitrust policy and enforcement. At least as it relates to economic objectives (and the consumer-welfare debate), the EU and some Member States have made their more progressive agenda clear for some time. Executive Vice President and Commissioner Vestager has elaborated on the EU’s digital-economy agenda on the global stage.

Hence, we have long seen from the EU Commission a commitment to interpreting Articles 101 and 102 in ways that promote non-discrimination among Member States, transparency for consumers, opportunities for new entrants and rivals, and no reluctance to invoke fairness in the application of competition principles. Again, this is largely baked into the Treaty itself. And what we see in the tech space, as well as other areas involving more complex markets (e.g., pharma, IP-driven industries), is the EU and Member States trying to figure out how best to apply these principles to the digital age and other complex industries, while still allowing firms to enjoy the benefits of scale and efficiencies. Sometimes the factors will all point in the same direction; but often it will be a delicate balance. Either way, as the EU continues to pursue its enforcement objectives, the debate will continue—and it will not slow down.

Finally, with the relative constraints of U.S. law and enforcement discretion, the future holds only a limited opportunity for convergence between Section 2 of the Sherman Act and TFEU Article 102, with perhaps a greater prospect in addressing mergers under Section 7 of the Clayton Act and the EU Merger Regulation. There is, however, a significant opportunity for an increase in multi-jurisdictional cooperation and coordination, especially as it relates to truly global “mega-mergers” as well as remedies. In this respect, the OECD and ICN are promoting increased cooperation among agencies. A joint OECD/ICN report on the state of international cooperation was presented at the last OECD Competition Committee in December 2020, and this is an area in which the ICN and OECD could make significant strides in the coming years, especially as non-U.S. enforcement continues to converge.36

Socio-Political Objectives: Needed Coordination and Bold Leaders

Beyond the narrowly focused debate that tends to center on the U.S. version of the consumer-welfare standard, there is a broader view of antitrust that is gaining significant traction in several parts of the globe. In the U.S., it is sometimes difficult to see competition law and enforcement evolving beyond the current case law and its free market underpinnings—each based in part on markets that generally work well, on the absence of a history of state-owned enterprise, and perhaps on a certain faith in the purity and continuity of antitrust. But for many other countries, there is an equal and growing pull from two other perspectives: first, industrial policy, recognizing a government role in partnering with industries—or prohibiting or commanding certain behaviors—ideally to the benefit of all marketplace constituents; and second, socio-political objectives as values of or constraints on antitrust, including concerns as wide ranging as sustainability and distributional equality.37 While inclusion of these considerations may be anathema to some (particularly those of the strictest Chicago-School persuasion), the future of global antitrust rightly highlights where these policies are embraced and gaining traction.

The Pandemic: A Need for Global Coordination

Along with the many other lessons to be learned from the enormous tragedy of the global pandemic, one must be that antitrust as usual is not necessarily optimal in a time where there is a critical need for certain types of supplies, innovation, and collaboration. Moreover, for global pandemics, there is the obvious question of how global market coordination can best be effectuated to meet legitimate and demonstrable needs of suppliers and consumers without creating long-term adverse effects on particular markets or consumers.

What we have learned, however, is that different jurisdictions were equipped differently—or not at all—to make antitrust-related adjustments for pandemic conditions. In the U.S., for example, there certainly was discussion, within cases or investigations, of a greater emphasis on “changing market conditions” and “failing/flailing” firm arguments to justify certain collaborations or mergers. While the authorities were open to business review consultation, for the most part the U.S. antitrust analysis was, and remains, ill-equipped to adjust for such events (although in an analogous war footing, past courts have modified antitrust analysis, though with arguably questionable justification and effect). Looking to the future, one naturally asks—as one of the authors has—whether it is not advisable to address the next pandemic with a global, ex ante industrial organization strategy rather than the piecemeal response that we saw in 2020 and that persists today? 38 Given the effect of the pandemic on both lives and markets across the globe, such an effort should have few serious detractors.

#### Those disputes trigger digital protectionism between the US and EU---BUT convergence must happen soon.

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IV. The way ahead: Convergence or divergence?

So far, this article presented how the differences between the American and European approaches to data protection provide EU regulators with motivation to strengthen antitrust enforcement in data markets. Moreover, it argued that once this process starts, the unique features of European antitrust policy will prove a perfect incubator, so that antitrust cases against US tech companies for dominance violations should grow. Americans do not share and may not understand neither the motivation nor the antitrust tools employed in the EU. 110 As the Atlantic divide on antitrust enforcement widens (and given that actual protectionist policies are on the rise) 111 calls of digital protectionism should afloat. Tensions run both ways, as Europeans may also be startled by American complaints against what they see as a regular application of the rule of law. 112

With a trade war between the EU and the US looming after a series of trade sanctions, 113 increased strains between two of the world's leading trade and security partners can do little good. 114 The digital economy is a sensitive area and the EU/US safe harbour for data transfer is proof of the damage that may arise from disputes. The first Safe Harbor came after a major trade conflict between the EU and the US over personal data. 115 By striking it down, EU Courts' placed thousands of American and European companies in disarray, 116 reason why business leaders in both jurisdictions welcomed the swift conclusion of the Privacy Shield. 117 The challenge remains, however, on whether it is desirable or possible to bridge such significant cultural differences, or at least develop clear mechanisms that prevents tensions arising from pure misunderstanding.

This remains a contingent question. On one side, convergence may never be necessary. It is perfectly reasonable and may even be optimal that different legal systems will provide different solutions to challenges of a new internet era, forcing agents to adapt to the norms of a given jurisdiction. 118 Lack of convergence is burdensome and may increase the cost of doing business across the Atlantic, 119 but the so far successful implementation of the 'right to be forgotten' experience in Europe demonstrates that both markets are large enough to justify companies adopting different solutions. The risk is that shifts in market behaviour may lead to the 'Brussels' effect' and the export of stricter standards, 120 something that may trigger unpredictable reactions by US authorities facing loss of sovereignty.

On the other, the safe harbour demonstrates how convergence is possible if parties move to bridge differences. As there is more to explore from an academic perspective in this second scenario, this section will focus on that. Bringing together such disparate regimes will require both political motivation and a coherent framework. This part argues that: (i) convergence efforts will require a balancing of the role that economics plays in antitrust enforcement on internet markets on both sides of the Atlantic; and (ii) that recent EU reforms open a window of opportunity for this to happen. In addition, it presents data portability as a mitigating measure that companies may explore to decrease tensions while and if converge does not take place.

#### Close EU-US tech cooperation is crucial to good governance, AND averting internet balkanization.

Juraj Majcin 21, PhD International Law, Graduate Institute, Geneva. Member, GeoTech Action Council, "EU-US tech cooperation: Strengthening transatlantic relations in data-driven economies," Atlantic Council, 06/16/2021, https://www.atlanticcouncil.org/blogs/geotech-cues/eu-us-tech-cooperation/.

First, the global economy and international trade have become increasingly data driven. According to the report on the future of international trade launched by the World Trade Organization in 2018, the growing digitalization of the global economy will impact international trade in three significant ways: the importance of cross-border data flows as a component of trade in goods and services will grow significantly in the coming years.; trade in digitizable goods (e.g. DVDs or physical books) will decline while trade in digital services such as streaming services and e-books will grow; and regulation of data flows and other technology legislation will become an important source of comparative advantage. Therefore, adopting an agreement on transatlantic data flows is indispensable to adapt the normative framework that governs the EU-US trade relations to the new data-based reality.

Second, innovation in the transformative technologies of the Fourth Industrial Revolution (e.g. artificial intelligence and cloud computing) requires a vast amount of data from various sources. As a consequence, countries and businesses that have access to large pools of data are more competitive than those that do not. Currently, China is often referred to as a country with access to almost infinite datasets while having data protection rules focused on national security rather than individual rights. This gives Chinese companies an enormous advantage over their European and American competitors in the development of AI and other technologies. Therefore, an agreement facilitating the exchange of data across the Atlantic via a secure and privacy-respecting framework may increase the competitiveness of both European and American companies in the global economy.

Third, authoritarian states such as Russia or China promote an illiberal, techno-nationalist vision of global governance based on harsh restrictions on cross-border data flows with little respect for fundamental human rights. Even more troubling is that these states export their vision of tech governance to developing countries by selling their technology and providing training programs on surveillance and other repressive techniques. They are also highly active at the multilateral level. China, for instance, promotes its approach to internet regulation as an alternative to the current internet architecture via various standardization fora and strategic documents such as China Standards 2035 or the new IP protocol proposed by China to the International Telecommunications Union (ITU). For this reason, by establishing a transatlantic framework on data governance that would ensure free flow of data while protecting human rights, the EU and United States would reiterate their commitment to free internet and set a global standard for other countries to follow.

Fourth, the COVID-19 pandemic has shown how crucial it is for governments to have well-functioning, speedy, and secure access to data of different types and origin. By using data modeling and AI technologies, public authorities can predict with greater accuracy the evolution of different public emergencies as well as long-term threats and thus adopt better informed, more precisely targeted policies. This will be of particular importance to refine societal adaptation capacity and resilience to climate change in a wide array of fields, ranging from agriculture to urban planning to public health. Secure data sharing between the US and European publics as well as research authorities may help significantly in this endeavor. However, to tackle the most pressing global issues such as global pandemics or climate change, the United States and the European Union need a data sharing framework that extend beyond the transatlantic space. Therefore, it is crucial that the EU and United States find agreement on the creation of a safe, rights-based data exchange framework that would foster the connection between experts and research institutions from other global players such as China, India, or Brazil.

#### That collapses global internet openness---extinction.

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The Internet has created an extraordinary new democratic forum for people around the world to express their opinions. It is revolutionizing global access to information: Today, more than 1 billion people worldwide have access to the Internet, and at current growth rates, 5 billion people — about 70 percent of the world’s population — will be connected in five years.

But this growth trajectory is not inevitable, and threats are mounting to the global spread of an open and truly "worldwide" web. The expansion of the open Internet must be allowed to continue: The mobile and social media revolutions are critical not only for democratic institutions’ ability to solve the collective problems of a shrinking world, but also to a dynamic and innovative global economy that depends on financial transparency and the free flow of information.

The threats to the open Internet were on stark display at last December’s World Conference on International Telecommunications in Dubai, where the United States fought attempts by a number of countries — including Russia, China, and Saudi Arabia — to give a U.N. organization, the International Telecommunication Union (ITU), new regulatory authority over the Internet. Ultimately, over the objection of the United States and many others, 89 countries voted to approve a treaty that could strengthen the power of governments to control online content and deter broadband deployment.

In Dubai, two deeply worrisome trends came to a head.

First, we see that the Arab Spring and similar events have awakened nondemocratic governments to the danger that the Internet poses to their regimes. In Dubai, they pushed for a treaty that would give the ITU’s imprimatur to governments’ blocking or favoring of online content under the guise of preventing spam and increasing network security. Authoritarian countries’ real goal is to legitimize content regulation, opening the door for governments to block any content they do not like, such as political speech.

Second, the basic commercial model underlying the open Internet is also under threat. In particular, some proposals, like the one made last year by major European network operators, would change the ground rules for payments for transferring Internet content. One species of these proposals is called "sender pays" or "sending party pays." Since the beginning of the Internet, content creators — individuals, news outlets, search engines, social media sites — have been able to make their content available to Internet users without paying a fee to Internet service providers. A sender-pays rule would change that, empowering governments to require Internet content creators to pay a fee to connect with an end user in that country.

Sender pays may look merely like a commercial issue, a different way to divide the pie. And proponents of sender pays and similar changes claim they would benefit Internet deployment and Internet users. But the opposite is true: If a country imposed a payment requirement, content creators would be less likely to serve that country. The loss of content would make the Internet less attractive and would lessen demand for the deployment of Internet infrastructure in that country.

Repeat the process in a few more countries, and the growth of global connectivity — as well as its attendant benefits for democracy — would slow dramatically. So too would the benefits accruing to the global economy. Without continuing improvements in transparency and information sharing, the innovation that springs from new commercial ideas and creative breakthroughs is sure to be severely inhibited.

To their credit, American Internet service providers have joined with the broader U.S. technology industry, civil society, and others in opposing these changes. Together, we were able to win the battle in Dubai over sender pays, but we have not yet won the war. Issues affecting global Internet openness, broadband deployment, and free speech will return in upcoming international forums, including an important meeting in Geneva in May, the World Telecommunication/ICT Policy Forum.

The massive investment in wired and wireless broadband infrastructure in the United States demonstrates that preserving an open Internet is completely compatible with broadband deployment. According to a recent UBS report, annual wireless capital investment in the United States increased 40 percent from 2009 to 2012, while investment in the rest of the world has barely inched upward. And according to the Information Technology and Innovation Foundation, more fiber-optic cable was laid in the United States in 2011 and 2012 than in any year since 2000, and 15 percent more than in Europe.

All Internet users lose something when some countries are cut off from the World Wide Web. Each person who is unable to connect to the Internet diminishes our own access to information. We become less able to understand the world and formulate policies to respond to our shrinking planet. Conversely, we gain a richer understanding of global events as more people connect around the world, and those societies nurturing nascent democracy movements become more familiar with America’s traditions of free speech and pluralism.

That’s why we believe that the Internet should remain free of gatekeepers and that no entity — public or private — should be able to pick and choose the information web users can receive. That is a principle the United States adopted in the Federal Communications Commission’s 2010 Open Internet Order. And it’s why we are deeply concerned about arguments by some in the United States that broadband providers should be able to block, edit, or favor Internet traffic that travels over their networks, or adopt economic models similar to international sender pays.

We must preserve the Internet as the most open and robust platform for the free exchange of information ever devised. Keeping the Internet open is perhaps the most important free speech issue of our time.

#### Specifically---disease, disasters, resource depletion and black swans.

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Many great civilisations have fallen, leaving nothing but cracked ruins and scattered genetics. Usually this results from: natural disasters, resource depletion, economic meltdown, disease, poor information flow and corruption. But we’re luckier than our predecessors because we command a technology that no one else possessed: a rapid communication network that finds its highest expression in the internet. I propose that there are six ways in which the net has vastly reduced the threat of societal collapse.

Epidemics can be deflected by telepresence

One of our more dire prospects for collapse is an infectious-disease epidemic. Viral and bacterial epidemics precipitated the fall of the Golden Age of Athens, the Roman Empire and most of the empires of the Native Americans. The internet can be our key to survival because the ability to work telepresently can inhibit microbial transmission by reducing human-to-human contact. In the face of an otherwise devastating epidemic, businesses can keep supply chains running with the maximum number of employees working from home. This can reduce host density below the tipping point required for an epidemic. If we are well prepared when an epidemic arrives, we can fluidly shift into a self-quarantined society in which microbes fail due to host scarcity. Whatever the social ills of isolation, they are worse for the microbes than for us.

The internet will predict natural disasters

We are witnessing the downfall of slow central control in the media: news stories are increasingly becoming user-generated nets of up-to-the-minute information. During the recent California wildfires, locals went to the TV stations to learn whether their neighbourhoods were in danger. But the news stations appeared most concerned with the fate of celebrity mansions, so Californians changed their tack: they uploaded geotagged mobile-phone pictures, updated Facebook statuses and tweeted. The balance tipped: the internet carried news about the fire more quickly and accurately than any news station could. In this grass-roots, decentralised scheme, there were embedded reporters on every block, and the news shockwave kept ahead of the fire. This head start could provide the extra hours that save us. If the Pompeiians had had the internet in 79AD, they could have easily marched 10km to safety, well ahead of the pyroclastic flow from Mount Vesuvius. If the Indian Ocean had the Pacific’s networked tsunami-warning system, South-East Asia would look quite different today.

Discoveries are retained and shared

Historically, critical information has required constant rediscovery. Collections of learning -- from the library at Alexandria to the entire Minoan civilisation -- have fallen to the bonfires of invaders or the wrecking ball of natural disaster. Knowledge is hard won but easily lost. And information that survives often does not spread. Consider smallpox inoculation: this was under way in India, China and Africa centuries before it made its way to Europe. By the time the idea reached North America, native civilisations who needed it had already collapsed. The net solved the problem. New discoveries catch on immediately; information spreads widely. In this way, societies can optimally ratchet up, using the latest bricks of knowledge in their fortification against risk.

Tyranny is mitigated

Censorship of ideas was a familiar spectre in the last century, with state-approved news outlets ruling the press, airwaves and copying machines in the USSR, Romania, Cuba, China, Iraq and elsewhere. In many cases, such as Lysenko’s agricultural despotism in the USSR, it directly contributed to the collapse of the nation. Historically, a more successful strategy has been to confront free speech with free speech -- and the internet allows this in a natural way. It democratises the flow of information by offering access to the newspapers of the world, the photographers of every nation, the bloggers of every political stripe. Some posts are full of doctoring and dishonesty whereas others strive for independence and impartiality -- but all are available to us to sift through. Given the attempts by some governments to build firewalls, it’s clear that this benefit of the net requires constant vigilance.

Human capital is vastly increased

Crowdsourcing brings people together to solve problems. Yet far fewer than one per cent of the world’s population is involved. We need expand human capital. Most of the world not have access to the education afforded a small minority. For every Albert Einstein, Yo-Yo Ma or Barack Obama who has educational opportunities, uncountable others do not. This squandering of talent translates into reduced economic output and a smaller pool of problem solvers. The net opens the gates education to anyone with a computer. A motivated teen anywhere on the planet can walk through the world’s knowledge -- from the webs of Wikipedia to the curriculum of MIT’s OpenCourseWare. The new human capital will serve us well when we confront existential threats we’ve never imagined before.

Energy expenditure is reduced

Societal collapse can often be understood in terms of an energy budget: when energy spend outweighs energy return, collapse ensues. This has taken the form of deforestation or soil erosion; currently, the worry involves fossil-fuel depletion. The internet addresses the energy problem with a natural ease. Consider the massive energy savings inherent in the shift from paper to electrons -- as seen in the transition from the post to email. Ecommerce reduces the need to drive long distances to purchase products. Delivery trucks are more eco-friendly than individuals driving around, not least because of tight packaging and optimisation algorithms for driving routes. Of course, there are energy costs to the banks of computers that underpin the internet -- but these costs are less than the wood, coal and oil that would be expended for the same quantity of information flow.

The tangle of events that triggers societal collapse can be complex, and there are several threats the net does not address. But vast, networked communication can be an antidote to several of the most deadly diseases threatening civilisation. The next time your coworker laments internet addiction, the banality of tweeting or the decline of face-to-face conversation, you may want to suggest that the net may just be the technology that saves us.

#### AND it exposes critical infrastructure to devastating cyber-attacks.

Mark A. Lemley 21, William H. Neukom Professor, Stanford Law School, "The Splinternet," Duke Law Journal, Vol. 70, 2021, pg. 1421.

Nationalized surveillance-enabled systems aren’t just enabling government repression. They’re also a cyber-security nightmare. Collect all of the sensitive data about what people are saying, what they’re doing, what their accounts look like in a government system, and that government system will be hacked. I guarantee it. The more valuable the data the government collects, the bigger the target its database will be. And we’ve built not just our political and our social polity and conversation into the internet, we’ve built many of our most important systems around the internet backbone. Your banks, your power companies, various things that we depend on for the infrastructure of modern civilization are built into a network that we are increasingly making a nationalized, hackable, surveilled system. And the idea that governments—U.S. or foreign—will have more control over them is troubling.

#### Malware spreads between interlinked systems---causing use or lose pressures AND nuclear use.

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The vulnerability of nuclear forces and C3I systems creates the risk of inadvertent escalation: that is, escalation resulting from military operations or threats that are not intended to be escalatory. So-called crisis instability, for example, could arise if a state were afraid of being disarmed more or less completely in a preemptive strike by an adversary, whether or not such fears were well founded.4 In the most extreme case, “use-’em-or-lose-’em” pressures could lead the state to employ nuclear weapons, conceivably in its own preemptive attempt to disarm its adversary, but more likely in a limited way to try to terrify the opponent into backing down. In less extreme scenarios, a state afraid of being disarmed might take steps–issuing nuclear threats, for example, or dispersing mobile nuclear forces– that raised the likelihood of nuclear use later.

This danger is likely to be exacerbated by any cyber vulnerabilities affecting nuclear forces and C3I systems. Most directly, the existence of such vulnerabilities could intensify existing fears of being disarmed–fears that are already acute in China and Russia (as well as in Pakistan and, most likely, North Korea).5 However, because of their unique characteristics and effects, cyber threats could create at least three qualitatively new mechanisms by which a nuclear-armed state might come to the incorrect conclusion that its nuclear deterrent was under threat. First, the purpose of cyber interference could be misinterpreted. In particular, espionage could be mistaken for an attack. Second, a cyberattack could have a more significant effect than intended. Malware implanted into information technology (IT) systems associated with non-nuclear weapons could accidentally spread into more sensitive nuclear-related systems, for instance. Third, the initiator of a cyber operation could be misidentified. An operation carried out by a third party, for example, could be misattributed by one state in a bilateral confrontation to its opponent. What makes these pathways so pernicious is that the catalyst for escalation could appear to its initiator to be a relatively benign action.

To make matters worse, such pathways could lead to inadvertent escalation even if the target of the cyber interference were not afraid of being completely disarmed. Today at least, this description fits the United States. If, in a conflict against Russia, say, the United States wrongly concluded that its strategic early-warning system was under cyberattack, it might reason that Moscow was seeking to undermine U.S. missile defenses, which use early-warning data, prior to launching a nuclear attack.6 Given that U.S. declaratory policy explicitly highlights the option of a nuclear response to non-nuclear attacks on nuclear C3I assets, such a “misinterpreted warning” might lead Washington to use nuclear weapons.7 But even if it did not, its response, which might include nuclear threats, could still be escalatory.

My focus here is narrowly limited to inadvertent cyber threats against, or interference with, one state’s nuclear forces or C3I systems by another nuclear-armed state (C3I systems encompass not only communication capabilities, but also the intelligence, surveillance, and reconnaissance capabilities, including early warning, that would be critical to decision-making). To be sure, cyber vulnerabilities probably create other escalation risks too, though, in my judgment, they are less serious.8 For example, while no state would likely try to detonate another’s nuclear weapons, a nihilistic terrorist group might (though it is unclear whether such a group could obtain the requisite cyber capabilities). Separately, vulnerabilities associated with conventional forces or their C3I systems could increase the likelihood of a conventional war’s escalating to a higher level of violence, thus making nuclear use more credible.9

Cyber interference with nuclear forces and C3I systems can involve two (not mutually exclusive) types of operations: espionage and attack. Cyber espionage involves collecting data from a target IT system without otherwise damaging it. A cyberattack involves undermining the operations of the target system, typically by compromising the integrity or availability of data. Cyber tools suitable for surveilling or attacking nuclear forces or C3I systems have innumerable differences from noncyber tools, which are themselves quite varied. Six of these differences are particularly salient to the risk of inadvertent nuclear escalation.

First, cyber espionage offers the potential to obtain information about an adversary’s military forces and operations that cannot plausibly be obtained in any other way. By accessing an adversary’s C3I systems directly, cyber tools may be capable of exfiltrating exceptionally sensitive information, such as the locations of mobile delivery systems. This is not to suggest that cyber surveillance is infallible. As a security measure, for example, a state could choose not to track the movements of its mobile delivery systems (or it could do so only approximately). Alternatively or additionally, it could try to use a cyber intrusion in its networks to feed misinformation to the adversary. In spite of these and other limitations, however, cyber espionage almost certainly offers unique advantages. For example, no practical constellation of high-resolution surveillance satellites in low Earth orbit could provide continuous coverage of a given location on Earth’s surface.10 Cyber surveillance, by contrast, may allow for continuous monitoring of an adversary’s military posture.

Second, cyber weapons offer an unparalleled capability to manipulate the data that go into decision-making. Other types of weapons, by destroying or disabling sensors or communication systems, can also deny data to decision-makers. However, their use generally alerts the target to the fact it is under attack. By contrast, if a well-designed cyber weapon is used, a loss of data may appear to be, say, the result of a malfunction, potentially allowing the attacker to conduct surprise follow-on attacks. Even more significant, cyber weapons can be used to feed false information to decision-makers. For example, the Stuxnet virus, which was reportedly developed by the United States and Israel, was designed not only to destroy centrifuges at Iran’s Natanz enrichment plant, but also to hinder plant operators from discovering the cause of these failures by producing falsely reassuring readings on monitoring equipment.11 In a similar vein, sophisticated cyber weapons offer a unique capability to shape an adversary’s perception of a battlefield by feeding misinformation into C3I systems.12 To be sure, information operations have always been a part of warfare. However, cyber weapons represent a sea change because their effects can be tailored with great precision in real time, and because they could be used to directly influence the perceptions of high-level decision-makers.

Third, cyber operations–whether conducted for espionage or offensive purposes–can present particularly significant risks of unanticipated collateral effects, that is, of affecting IT systems other than the intended target.13 Noncyber weapons can, of course, lead to collateral damage. Yet such effects are inherently constrained by geography. Moreover, the likelihood of physical collateral damage can be often quantified, at least to some extent (military planners may be able to estimate, for example, the probability of an incoming weapon missing its military target and hitting a nearby civilian facility).14 The risks of collateral effects in cyberspace are much more difficult to estimate. Minimizing such effects relies, in part, on detailed intelligence about the target network and on connections between it and other networks. Obtaining the requisite intelligence is potentially much more difficult than identifying what surrounds a target in physical space (as is verifying that the resulting picture is complete). To complicate matters further, sophisticated malware must generally be tailored to each target and, if revealed, will become ineffective once the adversary can clean its networks and fix whatever exploit was used to gain access. As a result, the effects of cyber weapons cannot usually be understood through testing, further increasing the likelihood of unanticipated collateral damage (simulations can be used but they are only as good as the available intelligence on the target).

Fourth, in peacetime, malware used to enable a cyberattack may often be inserted into an enemy’s networks–but not activated–in the hope that it will remain undetected and thus can be used in a potential future crisis or conflict. (In theory, not only can a vulnerability in an operational IT system be exploited in this way, but so too could security weaknesses in the supply chain for the system’s components.) Noncyber weapons, by contrast, are generally used as and when the decision to authorize a strike on a particular target is taken.15 One consequence of this difference is that, if a state discovers dormant malware in its networks, it can be faced with the challenge of attributing it–that is, identifying which entity is responsible for its implantation–before activation. The equivalent challenge rarely arises with the kinds of noncyber weapons typically used in interstate warfare (though it does arise in irregular warfare or counterterrorism with unexploded ordnance).

Fifth, and relatedly, cyberattacks are generally easier to conceal than other forms of attack. As a result, decision-makers may be more inclined to authorize them. In fact, if the goal is for a cyber weapon to have either a persistent effect or an effect when triggered at some future time, the malware used in the attack must remain hidden to be effective because exposure could enable the adversary to take countermeasures.

Sixth, and finally, distinguishing between offensive operations and espionage is significantly more challenging in cyberspace than in other domains.16 To be sure, the line dividing espionage and offensive operations in physical space is not always entirely clear. Aircraft–unmanned aerial vehicles (UAVs), in particular –are used for both surveillance and offensive operations. But the distinction is much murkier in cyberspace. One challenge is that identifying the purpose of a piece of malware–understanding whether it can be used for espionage, offensive purposes, or both–can be time-consuming. In a fast-moving conflict or crisis, this process might move slower than decision-making. Moreover, even if a state quickly and confidently established that a piece of malware could be used solely for espionage, it could not be confident that whatever vulnerability was used to introduce the malware would not also be exploited for offensive purposes–at least until it had identified and fixed the vulnerability.

States can threaten each other’s nuclear forces through a combination of offensive “counterforce” operations to target nuclear-weapon delivery systems preemptively, and air and missile defense operations to intercept whatever remained. The United States openly acknowledges it would seek to limit the damage it would suffer in a nuclear war.17 Russian doctrine is believed to embrace a similar concept.18 India may be moving in the same direction.19

The question of whether, in practice, a state could actually succeed in limiting the damage it would suffer in a nuclear war to an extent that decision-makers would consider meaningful is currently a subject of considerable debate.20 However, from the perspective of inadvertent escalation, what matters is not whether damage-limitation operations would actually prove effective, but whether a potential target believes they might. In this context, Chinese and Russian fears that the United States is seeking the capabilities–non-nuclear capabilities, in particular–to negate their nuclear deterrents could prove escalatory in a crisis or conflict by generating “crisis instability,” that is, pressures to use nuclear weapons before losing the capability to do so.21 And even though the United States is not concerned today about the possibility of being disarmed, Washington appears to be less sanguine about the future, given growing threats to its C3I assets, in particular.

Cyber capabilities could contribute to damage-limitation operations in two distinct ways. First, cyber espionage could prove useful in collecting intelligence that might increase the effectiveness of counterforce attacks and air and missile defenses, especially if complemented by effective analytic tools for synthesizing large amounts of data from multiple sources.22 If cyber espionage helped reveal the locations of mobile weapons, for example, it could enable preemptive attacks against them. And if it helped to reveal targeting data, it could assist defenses in intercepting missiles and aircraft after launch.

Second, cyber weapons could be used, alongside other capabilities, to conduct counterforce strikes. A hypothetical cyber “kill switch” that could permanently shut down an adversary’s nuclear C3I systems would certainly be attractive to any state with a damage-limitation doctrine. In practice, this kind of perfect capability seems fanciful, not least because a state could find analog or even nonelectronic ways to use its own nuclear forces given enough time (in fact, some states may even prepare such means in advance). At best, therefore, a cyberattack could be a “pause button” that delayed an adversary’s ability to use its nuclear weapons. Real cyber weapons are likely to be still less effective, however. All nuclear-armed states likely operate multiple C3I systems with some degree of redundancy between them. Cyber operations would probably not prove equally effective against these different systems, potentially delaying the target from using some elements of its nuclear forces for longer periods of time than others.

Even given these limitations, however, cyberattacks could still assist with damage limitation. They could buy more time for counterforce operations to attrite an opponent’s nuclear forces and reduce the coherence of any retaliatory attacks, somewhat simplifying the task of air and missile defenses. Moreover, the potential for cyberattacks to shape an adversary’s perceptions could prove valuable. For example, an attacker might try to “blind” its adversary’s early-warning system just before launching counterforce strikes on its nuclear forces.

Just how effective cyber-enabled damage-limitation operations might prove in an actual conflict is far from clear, not least because of the difficulty of testing cyber weapons. That said, any state that has made the enormous investments necessary to develop damage-limitation capabilities is likely to spend relatively modest additional sums on developing complementary cyber tools, and it might reach a different conclusion about their potential efficacy. Even more important, from the perspective of inadvertent escalation, its potential adversaries might do so too.

China, in particular, appears to be concerned about cyber-enabled damage limitation. Summarizing the thinking of their peers on this subject, two Chinese scholars, Tong Zhao and Li Bin, have concluded that “Chinese analysts have demonstrated an acute awareness of the potential vulnerabilities of the country’s nuclear C3I system, particularly against cyber infiltrations.”23 Russian views have been less aired. In fact, a dichotomy has emerged in what little public discussion there has been. For example, three respected experts, including a former general officer in Russia’s Strategic Rocket Forces, have recently played down the threat, arguing that “because the command-and-control systems of strategic nuclear forces are isolated and highly protected, they are, in all probability, not vulnerable to cyber attacks.”24 At about the same time, however, another influential Russian scholar argued that, among the emerging non-nuclear technologies that could threaten nuclear forces, “probably the most dangerous development is cyber weapons, which could be used for non-nuclear disarming and decapitating attack by completely paralysing the entire command-and-control system.”25 News reports that Russia has created cyber defense units for its nuclear forces suggest that the Russian military may be less than sanguine about the cyber threat.26

Fears about cyber-enabled damage limitation may be particularly pernicious because of the potential difficulty of detecting a cyberattack. A sophisticated cyberattack on nuclear forces or C3I systems could conceivably occur without being detected. In the extreme case, a state might only find out that it had been attacked when it attempted to launch nuclear weapons and discovered that its ability to do so had been impeded in some way. If a state believed that it would be unlikely to detect an ongoing cyberattack, then it could rationally conclude that it might be under attack even in the absence of attack indicators. The simple belief that an opponent had highly sophisticated cyber capabilities could, therefore, precipitate a false positive–the incorrect assessment that an attack was underway–by itself. By contrast, if a state’s nuclear forces were under assault from kinetic strikes, the target would likely be aware. To be sure, it is still not entirely impossible that a state could wrongly come to believe it was under kinetic attack. Early-warning systems, for example, have produced false warnings of incoming ballistic missile strikes.27 But mistakes of this kind could be identified once the incoming weapons ceased to exist (though the window of time before they disappeared could be particularly dangerous).

To make matters worse, a state that was concerned about its nuclear forces and C3I systems coming under cyberattack might be inclined, especially in a crisis or conflict, to interpret ambiguous indicators in the worst possible light. For example, if one of its nuclear C3I systems malfunctioned because of, say, bad design or aging components, it might wrongly attribute the failure to a cyberattack (in fact, the temptation among operators to do so might be particularly strong if they would otherwise be held responsible for an internal failure). Regardless of precisely how it arose, however, a false positive that occurred in a crisis or conflict could generate significant escalation pressures.

Concerns about the potential for cyber operations to enhance the effectiveness of damage limitation can have effects beyond generating crisis instability at a time of heightened tensions or during a conflict. In peacetime, such concerns may induce nuclear-armed states to take steps to try to ensure that nuclear weapons could be employed when duly ordered in a crisis or conflict, even at the expense of exacerbating the danger of inadvertent or unauthorized use. Concerned states, for example, could remove permissive action links–electronic “locks” designed to prevent the unauthorized use of nuclear weapons–because of the perceived danger that they could be hacked and thus subverted to prevent authorized use.28

Alternatively or additionally, states could make plans to predelegate the authority to use nuclear weapons down the chain of command to guard against the possibility of the communication links serving national leaders being severed. The dangers of predelegation depend, in part, on the degree of flexibility afforded to commanders in determining whether and how to use nuclear weapons. Nevertheless, certain risks are inherent in any model. A localized communications failure might be mistaken for an attack, for example, leading to inadvertent use.29 Predelegation also increases the risk of unauthorized use because a field commander could order the use of nuclear weapons in a scenario in which he or she was not permitted to do so. This danger becomes greater as more people are granted launch authority. In this respect, cyber threats could promote a particularly dangerous form of predelegation by inducing a state to entrust launch authority to the relatively large number of lower-level officers who are capable of issuing a launch order without electronic communications.

Surveillance operations in cyberspace, even if conducted exclusively for defensive purposes, pose unique risks of escalation. Cyber surveillance of an adversary’s nuclear forces can serve purposes besides damage limitation. In any dyad involving two nuclear-armed states, each has a strong incentive to monitor the status of the other’s nuclear forces at all times–and particularly during a crisis or conflict–including for the exclusively defensive purpose of spotting any preparations for nuclear use. Several intelligence collection techniques, including overhead imagery and signals intelligence, are likely used for this purpose. Given the potentially unique advantages of surveillance in cyberspace, however, states may see good reason to adopt it alongside these other approaches, especially if they judge that the likelihood of cyber espionage being detected is small.

Depending on the sophistication of the malware used and the target’s defenses, the true likelihood of being detected may or may not be small, but the consequences of being caught could be significant. In fact, if the target detected ongoing cyber espionage of networks associated with its nuclear forces or C3I systems, inadvertent escalation could result from either of two concerns that are distinct from those that might plausibly be generated by other forms of surveillance.

First, even if the target of cyber interference were convinced that the operation was being conducted exclusively for the purpose of espionage, it might worry that the data being collected could be used against it in damage-limitation operations. Intelligence collection in physical space could also enable damage limitation, but it differs from cyber surveillance in one critical respect. In a crisis or conflict, a state would generally have no way of knowing whether or not countermeasures against physical surveillance (such as camouflage or concealment) had proved effective–unless its nuclear forces were successfully attacked. By contrast, if it detected an ongoing effort to collect intelligence through its C3I networks, it would know definitively that at least some of its cyber defenses had failed. This realization might lead the state to fear that attacks on its nuclear forces were imminent.

Second, because of the difficulty of rapidly distinguishing cyber espionage from a cyberattack, espionage against nuclear forces or C3I systems would risk being misinterpreted as an attack. In theory, the use of armed UAVs for surveillance of an adversary’s nuclear forces could generate a similar risk. However, a state motivated by purely defensive considerations would have strong and obvious reasons not to use armed UAVs in this way.

The risks resulting from cyber espionage being mistaken as an attack would depend on who had initiated the operation and who was the target. China or Russia might assess that U.S. cyber surveillance was actually an offensive effort intended to undermine–or, more likely, give Washington the option of undermining– Beijing’s or Moscow’s ability to launch nuclear weapons, thus potentially generating crisis instability. By contrast, because Washington is apparently more confident in the survivability of its nuclear deterrent, cyber espionage directed against U.S. nuclear forces or C3I systems would be less likely to have the same result. Nonetheless, such operations would likely be of real concern to Washington and could, for example, be misinterpreted as a prelude to nuclear use by China or Russia.

Even if the two states involved in a crisis or conflict did not engage in any kind of deliberate cyber interference with one another’s nuclear forces or C3I systems, one of them might wrongly conclude that the other had. Such a misperception, which could be the result of collateral effects or third-party action, could also induce escalation through crisis instability or misinterpreted warning.

A state that eschewed cyber operations of any kind against an opponent’s nuclear forces or C3I systems might still launch such operations against adversary military networks involved exclusively in non-nuclear operations. If, because of design flaws, imperfect intelligence, or mistakes in execution, the malware used in such attacks spread and infected networks that were involved in nuclear operations, the target might conclude that its nuclear forces or C3I systems were under deliberate cyberattack or cyber surveillance.

There could be collateral effects even if a state’s networks for nuclear operations were entirely isolated; air-gapping (physically isolating one particular network from others) is, after all, not a cyber security panacea.30 Moreover, achieving perfect isolation could prove difficult in practice.31 To give but one reason, every nuclear-armed state, apart from the United Kingdom, has dual-use delivery systems, which can be used to deliver nuclear or non-nuclear weapons. Such delivery systems represent a potential point of contact between the C3I systems supporting nuclear operations and those supporting non-nuclear operations.

In practice, some nuclear-armed states–perhaps many or even all of them– have not tried to isolate their nuclear C3I systems. The United States, for example, has a number of dual-use C3I assets for communications and early warning that support both nuclear and non-nuclear operations.32 Other nuclear-armed states, including China and Russia, may as well, but are less transparent.33 Because the networks supporting dual-use C3I assets are likely to be connected directly to others involved in non-nuclear operations, there may be a particularly high risk of their being subject to collateral effects.

#### AND those disruptions ripple---extinction.

Dennis Pamlin & Stuart Armstrong 15. Dennis Pamlin, Executive Project Manager Global Risks, Global Challenges Foundation, and Stuart Armstrong, James Martin Research Fellow, Future of Humanity Institute, Oxford Martin School, University of Oxford. February 2015. “Global Challenges: 12 Risks that threaten human civilization: The case for a new risk category,” Global Challenges Foundation, https://api.globalchallenges.org/static/wp-content/uploads/12-Risks-with-infinite-impact.pdf

Global Challenges – Twelve risks that threaten human civilisation – The case for a new category of risks 89 3.1 Current risks System Collapse 3.1.5 Global Global system collapse is defined here as either an economic or societal collapse on the global scale. There is no precise definition of a system collapse. The term has been used to describe a broad range of bad economic conditions, ranging from a severe, prolonged depression with high bankruptcy rates and high unemployment, to a breakdown in normal commerce caused by hyperinflation, or even an economically-caused sharp increase in the death rate and perhaps even a decline in population. 310 Often economic collapse is accompanied by social chaos, civil unrest and sometimes a breakdown of law and order. Societal collapse usually refers to the fall or disintegration of human societies, often along with their life support systems. It broadly includes both quite abrupt societal failures typified by collapses, and more extended gradual declines of superpowers. Here only the former is included. 3.1.5.1 Expected impact The world economic and political system is made up of many actors with many objectives and many links between them. Such intricate, interconnected systems are subject to unexpected system-wide failures due to the structure of the network311 – even if each component of the network is reliable. This gives rise to systemic risk: systemic risk occurs when parts that individually may function well become vulnerable when connected as a system to a self-reinforcing joint risk that can spread from part to part (contagion), potentially affecting the entire system and possibly spilling over to related outside systems.312 Such effects have been observed in such diverse areas as ecology,313 finance314 and critical infrastructure315 (such as power grids). They are characterised by the possibility that a small internal or external disruption could cause a highly non-linear effect,316 including a cascading failure that infects the whole system,317 as in the 2008-2009 financial crisis. The possibility of collapse becomes more acute when several independent networks depend on each other, as is increasingly the case (water supply, transport, fuel and power stations are strongly coupled, for instance).318 This dependence links social and technological systems as well.319 This trend is likely to be intensified by continuing globalisation,320 while global governance and regulatory mechanisms seem inadequate to address the issue.321 This is possibly because the tension between resilience and efficiency322 can even exacerbate the problem.323 Many triggers could start such a failure cascade, such as the infrastructure damage wrought by a coronal mass ejection,324 an ongoing cyber conflict, or a milder form of some of the risks presented in the rest of the paper. Indeed the main risk factor with global systems collapse is as something which may exacerbate some of the other risks in this paper, or as a trigger. But a simple global systems collapse still poses risks on its own. The productivity of modern societies is largely dependent on the careful matching of different types of capital325 (social, technological, natural...) with each other. If this matching is disrupted, this could trigger a “social collapse” far out of proportion to the initial disruption.326 States and institutions have collapsed in the past for seemingly minor systemic reasons.327 And institutional collapses can create knock-on effects, such as the descent of formerly prosperous states to much more impoverished and destabilising entities.328 Such processes could trigger damage on a large scale if they weaken global political and economic systems to such an extent that secondary effects (such as conflict or starvation) could cause great death and suffering. 3.1.5.2 Probability disaggregation Five important factors in estimating the probabilities of various impacts: 1. Whether global system collapse will trigger subsequent collapses or fragility in other areas. 2. What the true trade-off is between efficiency and resilience. 3. Whether effective regulation and resilience can be developed. 4. Whether an external disruption will trigger a collapse. 5. Whether an internal event will trigger a collapse. 1. Increased global coordination and cooperation may allow effective regulatory responses, but it also causes the integration of many different aspects of today’s world, likely increasing systemic risk. 2. Systemic risk is only gradually becoming understood, and further research is needed, especially when it comes to actually reducing systemic risk. 3. Since systemic risk is risk in the entire system, rather than in any individual component of it, only institutions with overall views and effects can tackle it. But regulating systemic risk is a new and uncertain task. 4. Building resilience – the ability of system components to survive shocks – should reduce systemic risk. 5. Fragile systems are often built because they are more efficient than robust systems, and hence more profitable. 6. General mitigation efforts should involve features that are disconnected from the standard system, and thus should remain able to continue being of use if the main system collapses 7. A system collapse could spread to other areas, infecting previously untouched systems (as the subprime mortgage crisis affected the world financial system, economy, and ultimately its political system). 8. The system collapse may lead to increased fragility in areas that it does not directly damage, making them vulnerable to subsequent shocks. 9. A collapse that spread to government institutions would undermine the possibilities of combating the collapse. 10. A natural ecosystem collapse could be a cause or consequence of a collapse in humanity’s institutions. 11. Economic collapse is an obvious and visible way in which system collapse could cause a lot of damage. 12. In order to cause mass casualties, a system collapse would need to cause major disruptions to the world’s political and economic system. 13. If the current world system collapses, there is a risk of casualties through loss of trade, poverty, wars and increased fragility. 14. It is not obvious that the world’s institutions and systems can be put together again after a collapse; they may be stuck in a suboptimal equilibrium. 15. Power grids are often analysed as possible candidates for system collapse, and they are becoming more integrated. 16. The world’s financial systems have already caused a system collapse, and they are still growing more integrated. 17. The world’s economies are also getting integrated, spreading recessions across national boundaries. 18. The world’s political and legal systems are becoming more closely integrated as well. Any risk has not been extensively researched yet, and there remain strong obstacles (mainly at the nation state level) slowing down this form of integration. 19. The politics of the post-system collapse world will be important in formulating an effective response instead of an indifferent or counterproductive one. 20. System collapses can be triggered internally by very small events, without an apparent cause. 21. External disruptions can trigger the collapse of an already fragile system. 22. The trade-off between efficiency and resilience is a key source of fragility in a world economy built around maximising efficiency. 23. Climate change, mass movements of animals and agricultural mono-cultures are interlinking ecosystems with each other and with human institutions. 24. There is a lot of uncertainty about systemic risk, especially in the interactions between different fragilities that would not be sufficient to cause a collapse on their own.

#### The plan harmonizes divergences resulting from weak US conduct law---AND, it rejuvenates US leadership in antirust.

Eleanor M. Fox 19, Walter J. Derenberg Professor, Trade Regulation, New York University School of Law, "Platforms, Power, and the Antitrust Challenge: A Modest Proposal to Narrow the U.S.-Europe Divide," Nebraska Law Review, Vol. 98, No. 297, 2019, Lexis.

Like the U.S., the EU went through two important phases with regard to the question: When is single-firm conduct anticompetitive? [\*303] In the first stage, EU law was formalistic. The law was aggressive against dominant-firm conduct that excluded rival firms. It contained a broad presumption against exclusive contracts by dominant firms. The second phase came in the 1990s, and, even more dramatically, in the first decade of the new millennium. This was epitomized by the European Commission's 2009 guidance paper on dominant firm conduct. 15In this second phase and in the guidance paper, the European Commission adopted, and the courts followed, a more economic approach. 16While incorporating economic analysis into the law, Europe retained certain guiding principles and approaches reflecting the place of antitrust in the Treaty. These approaches include that EU law is about community and integration. EU competition law is sympathetic with EU internal market free-movement law, which stresses the importance of free movement of goods, services and people across Member State lines. Likewise, EU law is antagonistic to Member State restraints and the privileges states grant to favored firms. Such restraints and privileges are distortions of competition. Both aspects - respect for free movement and antagonism to state restraints - are imported into EU competition law and specifically into abuse of dominance law. EU competition law stresses market access and the right of firms to contest markets on the merits. It is sympathetic to firms' access to networks. 17It is hostile to dominant firms' use of leverage to take advantages for themselves at the expense of competitors, thereby unleveling the playing field. EU competition law does not aim to protect inefficient competitors, but rather its precedents forge a clearer path for firms to access markets on their merits, free from obstructions by dominant firms. Still, detractors (including many in the U.S. antitrust community) contend that the EU excessively enforces its antitrust law against dominant firms (often American ones), and insist that the EU approach does protect competitors at the expense of consumers.

[\*304]

C. Presumptions and Divergences

EU competition law adopted its more economic approach nearly two decades ago. However, it never adopted the "Chicago School" premises. It does not assume markets work well. It does not admonish us to trust the market - especially not when the market is concentrated and dominated by a single firm. It does not presume that antitrust intervention is likely to mess up the market and chill competition and innovation. Its teaching implies a belief that lowering barriers to entry and keeping a clear path for challengers is likely to make the market more dynamic and thus serve consumers better. When dealing with innovation incentives, U.S. cases are likely to assume that antitrust action against a dominant firm will chill the firm's incentives to invent, 18 while EU law is more likely to find that the dominant firm's challenged conduct will chill the outsiders' incentives to invent. EU cases have documented this lost innovation. 19 U.S. competition law abhors duties of dominant firms to deal with competitors, calling such duties "forced sharing" and undermining incentives to invent. 20EU law applies a contrary principle: dominant firms, especially firms with power in one market that compete in an adjacent market, have a special responsibility not to impair rivals' competition on the merits. 21

Both jurisdictions aim to preserve and facilitate sustainable low pricing even if it displaces firms that cannot keep up with the competition. U.S. law, however, makes it harder than EU law to successfully challenge below-cost pricing. U.S. law requires the plaintiff to prove a probable recoupment scenario - that is, after the predatory siege, defendant must be likely to recover its losses by charging monopoly [\*305] prices high enough and long enough. 22EU law does not require proof of probable recoupment. 23It is enough that the predator thought the scheme was worth it. Because of the strict U.S. requirements, predatory pricing violations are virtually never proved under U.S. law.

Apart from these different presumptions and principles, much of the law governing unilateral conduct is very similar on both sides of the ocean. But the different presumptions and principles have resulted in diametrically different results on nearly identical facts in key cases, especially when the conduct challenged is a refusal to deal with competitors or customers. 24The differences reveal themselves in assessing the conduct of the big data platforms, as the Article shows below.

III. IMPLICATIONS FOR HIGH TECH, BIG DATA

A handful of high tech giants dominate markets. The firms were started from scratch by entrepreneurs with great ideas, and they attract millions of users every day. They are networks and platforms, have economies of scale, and feature network effects and winner-take-all markets. On the one hand, the network effects please users (who get more "friends" or suppliers or buyers), but on the other hand, they create uncommonly high barriers to entry and reinforce their market power. The firms offer their products "free" on one side of the market (but users give up their data); on the other side, they make huge revenues from advertising, including by selling the data of their users. The high tech firms operate with low-price models, not the high prices that traditionally attract antitrust attention. Some have been exposed for serious misuses or lax protection of data as well as for acquiring personal data from third party sources without permission. Some have waged media campaigns of false information against critics. They offer services in competition with the firms they host on their platforms, and they prefer their own products and demote their rivals, undermine creative start-ups by appropriating their ideas, mine the data of the firms they host to preempt the next big thing, snap up the start-ups that are potential competitive threats, and breach privacy rights of the platform's users. Much of this conduct may violate consumer protection and privacy protection laws. A question is whether the [\*306] firms are also violating the competition laws. Does the answer depend on whether the laws are those of the U.S. or those of the EU (and the many jurisdictions that follow EU law)? It might.

The conduct we shall examine poses challenging questions under Section 2 of the Sherman Act, which prohibits monopolization. The first step of analysis is defining the market, and the exercise of market definition is difficult. 25The second step is proof of monopoly power. Monopoly power is traditionally defined as the power to raise price above a competitive price and reduce output for a significant time. 26In platform markets, this proof may not be possible. The third step is proof of conduct that is anticompetitive. The court may require the plaintiff to establish that the conduct lowers output and raises prices 27by anticompetitive means. This may not be possible. The platforms are accumulating and using new forms of power. The big tech abuses do not fit neatly into the "Chicago School" requirements.

Under EU competition law, the case for abuse of dominance is easier to make. EU law is less demanding of proof of definition of the market. Moreover, a firm might hold a dominant position even when it does not have monopoly power under the neoclassical economists' definition. Status as a "gatekeeper" (power over a dominant platform) might suffice. 28A firm might abuse its dominance when it uses its power in one market to get significant competitive advantages in an adjacent market and does so by conduct that blocks rivals' access and has no competitive merit, 29even if it does not get market power in the second market.

These qualities of EU law make it a more flexible tool than the Sherman Act to deal with the new problems posed by high tech/big [\*307] data. Section 5 of the Federal Trade Commission Act, which prohibits unfair methods of competition, also has this flexibility, at least in theory. 30

IV. THREE EXAMPLES OF ALLEGED PLATFORM ABUSE

A. Google/Comparative Shopping

1. EU Law

In the Google/Comparative Shoppingcase, the European Commission condemned Google, as the dominant search engine, for demoting its rivals and preferring itself on its platform. Here are the salient facts it found:

Google held more than 90% of the general search market in Europe. It launched comparison shopping services. Google was not the first to offer comparative shopping services on its platform; others preceded it. Google entered this market in 2004 with a product called Froogle. But Froogle was not a good product. When Google Search treated Froogle neutrally with its rivals, Froogle performed poorly. This means, under neutral treatment, Froogle did not rank high on the responses to consumer search queries; it was relegated to back pages where it did not get many clicks - and clicks are the way products generate revenues through advertising. In 2008, Google changed its strategy fundamentally to automatically give a prominent place to Google's product (which was renamed and revamped as Google Shopping). Thereafter, Google Shopping appeared at or near the top of search results for comparative shopping services, and it began to appear with rich graphical features. Google Search demoted rivals' services. Even the services of rivals that were most highly ranked by the original neutral algorithm began to appear on average only on page 4. Users seldom access, much less click on, links on page 4. (The top search result on the computer page receives about 35% of the clicks; page 1 results receive about 95%; the first result on page 2 receives about 1%.) As a result of Google Search's software program change, traffic on Google Shopping increased substantially and traffic on the rivals, in spite of their merit, decreased substantially. While the Commission did not question Google's choice to display rich graphic features for the Google service at the top of the page of search results, the [\*308] Commission did question the fact that rivals could not get the same advantage. As a result of its strategy, Google Shopping increased its share in all thirteen markets in the European Economic Area, in many by a large amount.

Summarizing the changes caused by the demotions, the Commission said:

\* "Since the beginning of each abuse, Google's comparison shopping service has increased its traffic 45-fold in the United Kingdom, 35-fold in Germany, 19-fold in France, 29-fold in the Netherlands, 17-fold in Spain and 14-fold in Italy."

\* "Following the demotions applied by Google, traffic to rival comparison shopping services on the other hand dropped significantly. For example, the Commission found specific evidence of sudden drops of traffic to certain rival websites of 85% in the United Kingdom, up to 92% in Germany and 80% in France. These sudden drops could also not be explained by other factors. Some competitors have adapted and managed to recover some traffic but never in full." 31

The Commission concluded that Google abused its dominance by using its leverage in search to give its own comparative shopping service a significant advantage. The Commission found that Google had no objective justification for this conduct. It found that Google's change to prefer its own comparative shopping service was not a product improvement. Google had claimed as an improvement its addition of rich format on top of the results presented for the Google Shopping entry, but the Commission concluded that this addition could not be counted as an improvement because Google gave the embellishment to its product alone.

The Commission required Google to treat its own service equally with rivals' services. As usual, it required the undertaking to submit a plan to achieve compliance with the decision. As well, the Commission fined Google 2.42 million euros.

The case is on appeal to the European General Court. It will be judged in view of the Court of Justice's case law including the recent Inteljudgment, 32which emphasizes competitive effects. Whether a dominant firm's use of leverage to shift significant market share to itself, seriously narrowing market opportunities for competitors, violates EU competition norms will be decided on appeal. 33

[\*309]

2. U.S. Law

How would the Google/Comparative Shopping facts be analyzed under Section 2 of the Sherman Act? The jurisprudence suggests several good arguments for Google. First, market definition and market power would be contested matters. Google asserts that vertical searches are good alternatives to general search, enlarging the market so as to minimize Google's monopoly share of general search. Enlarging the market to include advertising (the paid side of the market) would likewise expand proof problems, even though Google has been labeled as dominant in online advertising with a 37% share. Second, whatever the market, Google's market power will be seriously contested, with Google insisting that it cannot and does not raise prices, reduce output, or lower quality. Third, in a similar comparative shopping case, it would be difficult for a U.S. court to find an anticompetitive abuse under Section 2 of the Sherman Act. Google is not an essential facility under U.S. law. It has no antitrust duty to deal fairly, let alone to deal at all, with firms that want to use its platform, except in rare circumstances. 34Moreover, it may be unlikely that, by reason of its demoting strategy, it acquired market power in the adjacent market (comparative shopping web services). It may be doubtful that it has power to limit output either in general search or in comparative shopping web services. As a result of the conduct, consumers/users are not confronted with a price rise, even though they do suffer a non-quantifiable loss by being given second-best information in answer to their queries, loss of the benefits of the improved performance that stronger head-on competition could bring, and loss of access to innovative products squeezed out by the demotions. (Whether the impugned conduct elevates prices charged to advertisers remains to be explored.) 35The losses, including chilling incentives of the demoted rivals, is speculative and, even if true, Google would urge that the antitrust enforcement itself chills Google's incentives to deliver innovative products. U.S. law is sympathetic to the assumption that it does. 36

The facts of Google/Comparative Shopping find parallels across the GAFA platforms. The abuse problem is probably not one of output limitation. The problem is the distortion of the market so that the firm [\*310] with power, leverage and a conflict of interests succeeds for reasons other than its merits, and the meritorious competition of rivals is suppressed.

What might the AmEx case add to the analysis? AmEx could open the door to full two-sided-market analysis, minimizing the market power and the antitrust harm. 37 AmExmakes it hard to infer market power from exclusionary effects. AmExputs a set of incumbent-preferring arguments into the mouth of Google. 38

We suggest below that the Federal Trade Commission, enforcing Section 5 of the Federal Trade Commission Act (which prohibits unfair methods of competition), could overcome the above obstacles more easily than could a court under Section 2 of the Sherman Act.

B. Facebook-Abuse of Data

1. German Law

On February 7, 2019, the German Federal Cartel Office (FCO) held that Facebook has violated the German abuse of dominance law by gathering personal data from sources beyond Facebook (e.g., every time the user clicks on "like") without the users' knowledge or permission, and using the data to compile a unique database on each user, enabling Facebook to offer advertisers distinctly targeted advertising and thus to enhance its revenues. The FCO characterized the violation as an exploitative one - Facebook exploited users, rather than excluded rivals. The appellate court, however, has suspended the FCO's order pending appeal, after expressing doubts about the legal basis for the decision. 39The following are some of the findings and analysis, as summarized by the FCO. 40

[\*311] Market, Market Power, and Dominance

Facebook is the largest social network in the world. It holds a dominant position in the German market for social networks, having more than a 90% market share. It has 2.3 billion active users worldwide, with 1.5 billion using Facebook daily. Facebook users in Germany number some 323 million monthly and 23 million daily. As to competition in Germany, Facebook faces only some small German providers, and their suitability as an alternative social network is limited in view of Facebook's economies of scale and network effects.

The FCO expressly based the assessment of market power on more than market share. It referenced recent amendments to the German Competition Act to include as indicia of market power: "competitively relevant data, economies of scale based on network effects, the behaviour of users who can use several different services or only one service and the power of innovation-driven competitive pressure ... ." 41Identity-based direct network effects were deemed an important factor in assessing Facebook's market power. Also important were indirect network effects stemming from advertiser-financed services: the larger the user base, the more audience for ads and the more profits to advertisers. Economies of scale that produce cost-savings "provide Facebook with a far greater scope for strategic decisions than its competitors have." 42Facebook invoked multi-homing as a countervailing force, but the FCO found the contention not established. Moreover, the FCO found: "Facebook has superior access to competition-relevant data, in particular the personal data of its users. As social networks are data-driven products, access to such data is an essential factor for competition in the market." 43Lack of access to data "can be an additional barrier to market entry." 44

The Harm to Competition

The FCO found that Facebook imposes exploitative business terms. "The damage for the users lies in loss of control: They are no longer able to control how their personal data are used. They cannot perceive which data from which sources are combined for which purposes ... ." 45Facebook "violates the constitutionally protected right to informational self-determination." 46Further competitive harm is caused to advertising customers, who are faced with a dominant supplier of advertising space in social networks.

[\*312] In finding an exploitative abuse, the FCO drew on contract principles and data protection principles, importing their values into antitrust analysis. Reference to the General Data Protection Regulation, the FCO said, helped to confirm Facebook's lack of justification for exploiting users' data. The FCO recognized Facebook's legitimate interests in processing the data, but found that the legitimate interests did not outweigh the harm to users' interests.

Facebook's Conduct Poses a Competition Problem

The FCO said that access to market data is essential to the market position of social network companies. "Access to data, above all in the case of online platforms and networks," 47is specified as a relevant factor for dominance by the German Competition Act. "Monitoring the data processing activities of dominant companies is therefore an essential task of a competition authority, which cannot be fulfilled by data protection officers." 48

Remedy

The FCO imposed no fine. Its aim was to change behavior. Facebook was required to submit a plan for compliance.

\* \* \*

The German Federal Ministry for Economic Affairs and Energy is further studying digital platforms and abuse of market power to determine whether modernization of the law is necessary. An expert committee issued a report, 49and a follow-up committee is tasked to suggest means to implement the initial report.

European Competition Commissioner Margrethe Vestager, while studying the report, noted "the importance of monitoring data monopolies and internet gatekeepers that can choke off data access to rivals." 50Moreover, the Directorate-General for Competition commissioned its own report. 51Meanwhile, a new Commission has been constituted. Vestager has not only been reappointed the Competition Commissioner, she has been appointed Executive Vice President for the EU's digital policy.

[\*313]

2. U.S. Law

Abuse in the collection and use of data, especially by the big data companies, is a big concern in the world. The abuses and their remedies are being studied in many jurisdictions in addition to Germany and the EU, including Australia, Japan and the UK.

Section 2 of the Sherman Act offers no parallel application to the German case. In the United States, a plaintiff would face difficulties at the outset in defining the market and proving monopoly power. But more basically, the claim of violation by abuse of data collecting, including from third party sites, and collecting and using the data surreptitiously and deceitfully, does not fit with the U.S. antitrust laws. The Sherman Act imposes no special responsibility, not even on a monopoly firm, to have regard for rivals or users. The right to refuse to deal (or to deal on chosen terms) is strong. Moreover, the German Facebook violation is an exploitative violation, not an exclusionary one, and Section 2 does not prohibit exploitative behavior (e.g., excessive prices). 52The German Facebook proceeding did not include exclusionary practices. Such practices, alleged elsewhere, include Facebook's cutting off user access to an improvement by Vine, a video-creating and sharing platform, apparently because Facebook took the Vine product to be a competitive threat to it. 53

Might lessons from AmExplay a role in the analysis? Let us postulate that consumers, including business users, are harmed on one side of the market. Their valuable data is coerced from them, aggregated from third party sources, and monetized lucratively. The social network charges zero (plus the data) to users and sells curated space to advertisers, making possible the zero user-charge. AmExand other decisions would counsel to count positively Facebook's efficiencies in data use and improvement of its services though collection and use of its data trove.

The FCO did consider the advertiser side of the market. It concluded that Facebook exploited advertisers as well as users. It did take note of efficiency benefits through increased accuracy of advertisers in targeting likely buyers, and benefits of the network's declining marginal costs, but it counted those advantages as contributors to Facebook's power, not as contributors to the public's or consumers' welfare. The FCO determined that the users' interests outweighed Facebook's interests. It so concluded not because, if monetized, the [\*314] Euro-amount of the gains to Facebook was less than the Euro-amount of the losses to users, but on quasi-constitutional grounds: people have a right to control their data and to know how it is going to be used; it was wrong for a dominant firm to coerce users to give up their data rights if they were to use Facebook's service at all.

While Section 2 of the Sherman Act has strict limits, Section 5 of the FTC Act is a more flexible vehicle. The FTC is not bound to ignore a problem just because Facebook's conduct may be exploitative rather than exclusionary or just because it interfaces with data privacy. Moreover, the FTC has consumer protection powers and Facebook's behavior raises serious consumer protection concerns. Indeed, the FTC already has a file on Facebook and has just penalized Facebook $ 5 billion for sharing with Cambridge Analytica, a political consultant to then-candidate Trump, data of 87 million Facebook users, which it used to compile voter profiles. 54If a data privacy problem is mixed with a consumer protection problem and possibly an antitrust problem (e.g., an abusive cut-off of access, or an anticompetitive acquisition), the FTC is well placed to consider the abuses together for whatever synergies may be mined. If vested with the multi-faceted matter, the FTC could consider formulating some rules and controlling principles, such as banning self-dealing and disallowing efficiency as a defense to coercion and deception.

C. Start-Ups: Nipping Competition in the Bud

Major platforms such as Facebook, through their massive data troves collected in part from the targets themselves, are well positioned to identify the promising start-ups that pose the greatest competitive threats to the platform, and buy them up or stamp them out. Because the start-ups typically lack significant revenues, the acquisition may be below the turnover thresholds required for premerger filing in some jurisdictions. Moreover, any single such acquisition may just be ignored as too insignificant.

Competition authorities in several jurisdictions are considering the need to be tougher on dominant platforms' systematically buying their most promising and threatening would-be rivals. Germany has revised its merger control thresholds to add a value-of-the-transaction test and to include debt as part of value, so that these rising-star start-ups do not escape assessment. 55The most commonly cited examples [\*315] of allegedly anticompetitive "snap-ups" is Facebook's acquisitions of Instagram and of WhatsApp, both of which platforms provide important alternatives for social network users seeking a model friendlier to younger users.

The future of such start-ups may be highly speculative at the time of acquisition. But what if, as it has been alleged, the dominant platform either buys up or stamps out all potentially threatening start-ups to preserve its dominance? The tale of Snapchat may be a cautionary one. Facebook pursued Snapchat. Snapchat said no. Then Facebook appropriated Snapchat's signature innovation: stories - a photo and video post-platform. The story is told in Facebook is Killing Snapchat with the Format It Created. 56

The big data strategies are reminiscent of tales of the Standard Oil Trust. By some reckoning the conduct may be called efficient. So was Standard Oil's conduct, as insisted by historian John S. McGee. 57But the efficiencies of Standard Oil's strategies did not prevent the giant predatory trust from being Exhibit A to the very enactment of the Sherman Act and did not dissuade the Supreme Court from breaking it up. 58

There are several big challenges to thwarting the so-called "killer acquisitions." One is to be able to identify the anticompetitive qualities of the acquisition at the time of vetting. The second is this: suppose the acquisitions are indeed harmful to competition today. It is possible under existing U.S. antitrust law, although not common, to obtain divestiture of assets whose acquisition turned out to be anticompetitive. The challenge, however, is to prove both that the consolidation is on balance anticompetitive (in spite of efficiency aspects such as better use of data), and that divestiture will noticeably produce competition and make consumers/users better off. Third, the possibility of sale to the dominant platform has been an incentive for start-ups to start up in the first place. One would want to be able to predict that the loss of this route to "success" would not cause more harm than good.

[\*316]

V. PROPOSALS

The "do nothing" and the "break them up" approaches are extreme policy approaches that at the one end would leave real competition problems unaddressed and at the other would apply blunt instruments to cure huge state-of-the-world dilemmas that pose daunting implementation problems and are sure to leave unfilled expectations in their wake.

There are three reasons why the United States might wish to take Europe's big data initiatives more seriously. First, European competition law is the law in a substantial part of the world. If the U.S. wants to be relevant in international transactions, it must appreciate European perspectives. Second, top down regulation is a possible substitute for antitrust. If the antitrust agencies ignore abuses of economic power that people care about, more intrusive regulation is likely to fill the gap. European competition policy gives some insight into how antitrust, complemented with consumer protection and privacy protection, can be an alternative to more intrusive regulation. 59Third, Europe may be right in some not insignificant ways.

We focus on the third point. Europe may be right. We address the skeptics who insist that there is no competition problem and that, if there is, it cannot be solved except by remedies that are worse than the disease. Is there a competition problem? Let us return to the three problems analyzed: (1) the Google/Comparative Shopping problem; (2) the German Facebook problem; and (3) acquisitions by dominant platforms of potentially threatening start-ups. Starting with the last, it is now recognized that the acquisitions of nascant competitors might be anticompetitive. If so, they are fair game for divestiture - if divestiture will indeed produce the desired competition. Going forward, these acquisitions should be vetted more seriously.

There is a philosophical divide between those who want to give more breathing space to even dominant platforms to buy promising start-ups whose futures are speculative, and those who are alarmed that the platforms are snapping up all threatening startups and are thereby insulating themselves from the competitive forces that could make them accountable. 60These are the usual philosophical tugs and play out with little fanfare (or get submerged) in the course of technocratic merger review.

The middle category - the German Facebook case - is largely a problem of deception, privacy invasion, and exploitation of people who [\*317] provide their data. While the German FCO was able to blend the several disciplines, the underlying problem treated in the German Facebook case is not likely to be seen as an antitrust problem in the United States.

We come, then, to category number 1: gatekeepers abuse the users of their platforms who compete with them, systematically downgrading the rivals, sabotaging their inventions, and appropriating their ideas to outcompete them. How to define the market, how to assess market power, how to identify an abuse as anticompetitive, and how to devise a remedy are all contested issues. In part, the divide is ideological. Do we stress that Google (for example) created its platform, conclude that it should be able to use it as it likes, and assume that legal duties will handicap invention? Or do we highlight Google's conflict of interests and observe that downgrading often-better rivals is inefficient as well as unfair? Do we emphasize that clogging the path to market interferes with the competition process, chills the incentives of the platform users, and defeats expectations of consumers, who expect best answers to their queries? In this late day of the political economy debate, the divide will not be closed by evidence or economics. The popular sentiment, however, tends to coincide with the concerns about power, its abuse, and the unaccountability of the dominant platforms. 61

Here are six suggestions for U.S. law, based on this author's perception that the big data antitrust abuses are real and pressing:

1. Recognize that the dominant big data platforms have economic power sufficient to cause competitive harms. When conduct of a dominant platform has demonstrable anticompetitive qualities, we should simplify the proofs of power and effects and get quickly to the question of procompetitive justifications. 62Anticompetitive qualities include clauses and conduct to frustrate multi-homing, interoperability, and data portability. If the platform engages in conduct to raise rivals' costs, to make alternatives infeasible, or to marginalize rivals, the burden should shift; and if defendants offer no credible procompetitive [\*318] explanation or justification, the conduct should be prohibited. The Federal Trade Commission is well situated to do this job. 63

2. Much conduct is likely to require deeper study of pros and cons. The FTC should examine the practices, listen to the justifications, and judge the conduct. It should not be required to prove that the platform's conduct will lessen output in the relevant market as a condition precedent to finding an offense. Output limitation is not the problem. To clarify the law, the FTC might write rules under its rule-making authority.

3. In the case of a dominant platform that also hosts its own services on the platform, the gatekeeper has a conflict of interest. The FTC should seriously consider establishing a duty of dominant platforms to treat all firms that are rivals on the platform (including its own) neutrally. As a first step the FTC should require the platform either to announce clearly regarding search query returns: "You are advised that we give preference to our own product" 64or to offer neutral, merit-based treatment. This can be done immediately. Writers and implementers of the algorithm should be rewarded on the basis of the system's performance, not on the basis of the platform's own products' performance.

### 1AC---Plan

#### Plan: The United States federal government should limit anticompetitive unilateral exclusion in the technology sector.

### 1AC---Solvency

#### Contention 3 is Solvency.

#### The plan deters and remedies exclusionary conduct.

John B. Kirkwood 21, Professor of Law, Seattle University School of Law. American Law Institute. Executive Committee, AALS Antitrust and Economic Regulation Section. Advisory Board, American Antitrust Institute. Advisory Board, Institute for Consumer Antitrust Studies, "Tech Giant Exclusion," Florida Law Review, Forthcoming, pg. 42-43, 01/15/2021, SSRN.

The tech giants, as we have seen, have excluded third parties selling on their platforms by demoting them in search results, using nonpublic seller-specific data to boost their own products, or refusing to deal with them simply because they are competitors. While this behavior is not widespread, it appears to be unjustified and anticompetitive. It enhances the tech giants’ market power and injures their customers. Yet no one in the United States has successfully challenged any of this conduct.

The most likely reason is that the conduct did not violate the Sherman Act. It is unilateral, not collusive, and it did not result in actual or imminent monopoly power. 224 This gap should be closed. The Sherman Act should be amended to reach unilateral exclusion by the tech giants that reduces competition significantly, even if it is unlikely to generate or maintain monopoly power. Further, the Department of Justice and the FTC should be authorized to obtain civil penalties if they establish a violation of this new section. This would couple public civil penalty enforcement with private treble damage actions, magnifying the deterrent effect of antitrust law.

These twin sanctions would alter the tech giants’ financial calculus. They would not deploy exclusionary tactics unless the likely gains outweighed the prospect of substantial financial penalties. Of course, that might not stop them in every case. They may figure that if they can disable rivals for a time they can achieve sufficient scale economies or network effects to ward off future entry, thereby earning long-run profits that would exceed the cost of any sanctions they have to pay.225 But they cannot count on that and the issue is not easy to resolve.226 In the face of such uncertainty, stiff financial sanctions are likely to reduce the incidence of exclusionary conduct. This is particularly so in complementary product markets, where the tech giants cannot generally hope to gain the scale and network advantages they possess in their core businesses.227 \*\*\*FOOTNOTE BEGINS\*\*\* 227 For example, Amazon sells private label batteries on amazon.com. Even if it could capture more of this complementary market for itself, it is unlikely to attain significant advantages over third party competitors like Eveready and Duracell. \*\*\*FOOTNOTE ENDS\*\*\*

The existence of Section 5 of the Federal Trade Commission Act is no reason not to expand the Sherman Act. In theory, Section 5 covers anticompetitive conduct that falls short of monopolization, but as Section A explains, its remedies are limited and its track record has been disappointing. Section B addresses the risk that expanding the Sherman Act would unduly deter procompetitive conduct. This risk can be minimized, however, by confining the amendment to the tech giants and including proof requirements that would defeat most challenges to desirable conduct. Section C describes the recent Congressional support for this change. Section D uses a detailed example to demonstrate that it would be workable in practice.

# 2AC

## Competition ADV

### Innovation Turn---2AC

#### Present tech innovation is inefficient AND useless.

Ashish Arora et al. 20, Senior Associate Dean for Strategy. Rex D. Adams Professor of Business Administration, Fuqua School of Business, Duke University; Sharon Belenzon, Professor, Strategy, Fuqua School of Business, Duke University. Research Associate, National Bureau of Economic Research; Andrea Patacconi, Professor, Strategy, Norwich Business School; Jungkyu Suh, PhD, Business, Duke University, "The Changing Structure of American Innovation: Some Cautionary Remarks for Economic Growth," Innovation Policy and the Economy, Vol. 20, 2020, NBER.

A defining feature of modern economic growth is the systematic application of science to advance technology. Many innovations that spurred economic growth in the twentieth century, including synthetic fibers, plastics, integrated circuits, and gene therapy, originated from advances in the natural sciences, engineering, and medicine. Science, by producing “a potential for technology far greater than existed previously,” clearly distinguishes modern economic growth from previous economic epochs (Kuznets 1971).

However, despite sustained increases in the quantity of scientific knowledge, productivity growth in most advanced economies has stagnated in recent decades in comparison to a “golden age” in the mid-twentieth century. Using data from the United States, Gordon (2016) shows that real gross domestic product (GDP) per hour (i.e., labor productivity) grew substantially in the middle of the twentieth century, from 1.79% per year between 1870 and 1920 to 2.82% per year between 1920 and 1970. However, in the most recent period (1970–2014), productivity grew by a modest 1.62% per year. Gordon concludes that productivity rose between 1920 and 1970 largely because of significant technological progress, but more recently technical advance has been much less potent in spurring growth. This slowdown is surprising given the sustained expansion of scientific input (measured in terms of research dollars spent) and output (measured by academic articles published) from American academia, as shown in figure 1.1

Chart

Description automatically generated

Gordon (2016) attributes the rapid pace of technological progress between 1920 and 1970 to the development and extension of earlier fundamental technologies, such as the internal combustion engine and electricity. This process, which was often accompanied by important advances in science and engineering, was largely carried out by researchers working in corporate labs, which by the 1920s had replaced individual entrepreneurs as the primary source of American invention. As Gordon writes:

Much of the early development of the automobile culminating in the powerful Chevrolets and Buicks of 1940–41 was achieved at the GM corporate research labs. Similarly, much of the development of the electronic computer was carried out in the corporate laboratories of IBM, Bell Labs, and other large firms. The transistor, the fundamental building block of modern electronics and digital innovation, was invented by a team led by William Shockley at Bell Labs in late 1947. The corporate R&D division of IBM pioneered most of the advances of the mainframe computer era from 1950 to 1980. Improvements in consumer electric appliances occurred at large firms such as General Electric, General Motors and Whirlpool, while RCA led the early development of television.

(Gordon 2016, 571–72)

By the 1980s, however, many corporations began to look to universities and small start-ups for ideas and new products.2 Large corporations’ reliance on externally sourced inventions grew, and many leading Western corporations began to withdraw from scientific research (Mowery 2009; Arora, Belenzon, and Patacconi 2018). Some corporate labs were shut down and others spun off as independent entities. Bell Labs had been separated from parent company AT&T and was placed under Lucent in 1996; Xerox PARC had also been spun off into a separate company in 2002. Others had been downsized: IBM under Louis Gerstner redirected research toward more commercial applications in the mid-1990s (Bhaskarabhatla and Hegde 2014).3 A more recent example is DuPont’s closing of its Central Research and Development Lab in 2016. Established in 1903, DuPont research rivaled that of top academic chemistry departments. In the 1960s, DuPont’s central research and development (R&D) unit published more articles in the Journal of the American Chemical Society than Massachusetts Institute of Technology (MIT) and California Institute of Technology (Caltech) combined. However, in the 1990s, DuPont’s attitude toward research changed and after a gradual decline in scientific publications, the company’s management closed its Central Research and Development Lab in 2016.4

These examples are backed by systematic evidence. National Science Foundation (NSF) data indicate that share of research (both basic and applied) in total business R&D in the United States fell from about 30% in 1985 to below 20% in 2015 (fig. 2). The figure also shows that the absolute amount of research in industry, after increasing over the 1980s, barely grew over the 20-year period between 1990 and 2010. Other data show the same decline. Utilizing data on scientific publications, Arora et al. (2018) show that the number of publications per firm fell at a rate of 20% per decade from 1980 to 2006 for R&D performed in American listed firms. The authors also find that the drop is even more dramatic for established firms in high-quality journals. For articles within the top quartile of journal impact factor scores, the magnitude of the drop increases to more than 30%. Large firms’ withdrawal from science can also be gleaned from the list of R&D 100 awards winners. Fortune 500 firms won 41% of the awards in 1971 but only 6% in 2006 (Block and Keller 2009). Over the same period, total industry R&D and patenting grew steadily, as did university-performed research (see fig. 6). This evidence points to the emergence of a new division of innovative labor, with universities focusing on research, large firms focusing on development and commercialization, and spin-offs, start-ups, and university technology licensing offices responsible for connecting the two.

Chart, histogram

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## Realignment ADV

## OFF

### T Structural---2AC

#### ‘Prohibitions’ include regulation---reject arbitrary distinctions.

John G. Koeltl 7, United States District Judge, “United States Baseball v. City of New York”, United States District Court for the Southern District of New York, 509 F. Supp. 2d 285, 297, 2007 U.S. Dist. LEXIS 63234, 8/27/2007, Lexis

The City responds that its home rule and police powers are broader pursuant to Article IX, Section 2(c) of the New York State Constitution, New York Home Rule Law § 10(1)(a)(12), and New York General City Law § 20(13) than the plaintiffs suggest. These provisions give the City the power to enact laws for the "safety, health, well-being, and welfare" of its residents. The City asserts [\*\*29] that the Bat Ordinance does not constitute a "prohibition" because it does not condemn all use of non-wood bats. It bars their use in competitive high school baseball games, but not for example in high school practices, junior high school games, "pick up" games, or youth league games that are not school-sponsored. Moreover, the City persuasively argues that the suggested distinction between "prohibitions" and other "regulations" is artificial and untenable, because all regulations prohibit some conduct that is incompatible with the regulatory standards and all "prohibitions" leave some conduct untouched. For example, a New York court upheld as a valid exercise of the police power a New York City law banning the possession in a public place of a knife with a blade of at least four inches in length in People v. Ortiz, 125 Misc. 2d 318, 479 N.Y.S.2d 613, 620 (Crim. Ct. 1984). The plaintiffs suggest the law at issue in Ortiz was a not a "prohibition," but it appears to be at least as complete a prohibition as the Bat Ordinance, which prohibits only certain uses of bats with certain defined characteristics.

#### ‘Practices’ includes exclusionary conduct.

OECD 90, Organisation for Economic Co-operation and Development, “GLOSSARY OF INDUSTRIAL ORGANISATION ECONOMICS AND COMPETITION LAW,” OECD, 1990, https://www.concurrences.com/IMG/pdf/oecd\_-\_glossary\_of\_industrial\_organisation\_economics\_and\_competition\_law.pdf?39924/e9f9a49f59fa42b7de2397532968788aa2855447

ANTICOMPETITIVE PRACTICES

INSTITUTION DEFINITION

Refers to a wide range of business practices in which a firm or group of firms may engage in order to restrict inter-firm competition to maintain or increase their relative market position and profits without necessarily providing goods and services at a lower cost or of higher quality. The essence of competition entails attempts by firm(s) to gain advantage over rivals. However, the boundary of acceptable business practices may be crossed if firms contrive to artificially limit competition by not building so much on their advantages but on exploiting their market position to the disadvantage or detriment of competitors, customers and suppliers such that higher prices, reduced output, less consumer choice, loss of economic efficiency and misallocation of resources (or combinations thereof) are likely to result.

Which types of business practices are likely to be construed as being anticompetitive and, if that, as violating competition law, will vary by jurisdiction and on a case by case basis. Certain practices may be viewed as per se illegal while others may be subject to rule of reason. Resale price maintenance, for example, is viewed in most jurisdictions as being per se illegal whereas exclusive dealing may be subject to rule of reason. The standards for determining whether or not a business practice is illegal may also differ. In the United States, price fixing agreements are per se illegal whereas in Canada the agreement must cover a substantial part of the market. With these caveats in mind, competition laws in a large number of countries examine and generally seek to prevent a wide range of business practices which restrict competition.

These practices are broadly classified into two groups: horizontal and vertical restraints on competition. The first group includes specific practices such as cartels, collusion, conspiracy, mergers, predatory pricing, price discrimination and price fixing agreements. The second group includes practices such as exclusive dealing, geographic market restrictions, refusal to deal/sell, resale price maintenance and tied selling. Generally speaking, horizontal restraints on competition primarily entail other competitors in the market whereas vertical restraints entail supplier-distributor relationships.

However, it should be noted that the distinction between horizontal and vertical restraints on competition is not always clear cut and practices of one type may impact on the other. For example, firms may adopt strategic behaviour to foreclose competition. They may attempt to do so by pre-empting facilities through acquisition of important sources of raw material supply or distribution channels, enter into long term contracts to purchase available inputs or capacity and engage in exclusive dealing and other practices. These practices may raise barriers to entry and entrench the market position of existing firms and/or facilitate anticompetitive arrangements.

### Antitrust PIC---2AC

#### Perm---do both.

Dr. Pedro Caro de Sousa 21, Advisor at the EUI Florence School of Regulation, Competition Expert with the OECD, DPhil from the University of Oxford, “Competition Enforcement and Regulatory Alternatives”, OECD, 6/7/2021, https://www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives-2021.pdf

Another view is that competition law and regulation are complements. Well-functioning markets can often best be achieved by the combination of timely, targeted competition enforcement and ex ante regulation that draws on a breadth of market experience (Coscelli, 2018[31]).

Complementary roles for economic regulation and competition law arise mainly in two instances: where the sectoral law and competition law have the same goal, i.e. the promotion of competition; or where sectoral regulations have goals broader than the promotion of competition that are nevertheless consistent with competition law (ICN, 2004, pp. 4-8[32]).10 In these circumstances, competition and regulation are not mutually exclusive. They operate in the same sphere of economic activity, address the same problems, and the use of one mechanism does not preclude the application of the other (Dunne, 2015, p. 56[5]).

There are numerous examples of how competition enforcement can complement sector-regulation. In regulated sectors, the sector regulator has sometimes been considered the ex ante controller of market power, via price, revenue and investment oversight, while the competition authority is considered the ex post controller of market power, via abuse of dominance and cartel enforcement (OECD, 2019, p. 7[11]). Competition law can help ensure that the regulatory regime achieves its economic goals, particularly those related to economic welfare; make markets perform more competitively, given the regulatory regime that happens to control them; and scrutinise private conduct that is not effectively reviewed or controlled by the regulatory regime (Hovenkamp, 2020, p. 899[33]).

#### Tech regs destroy clarity and get circumvented.

Steven Semeraro 02, Associate Dean & Associate Professor of Law at the Thomas Jefferson School of Law, “Regulating Information Platforms: The Convergence to Antitrust”, Telecommunications & High Technology Law, Volume 1, p. 178-180

IV. INDUSTRY-SPECIFIC REGULATION

Industry-specific regulation is believed to be needed where cooperation among competitors is necessary in order to maximize consumer welfare and where the public interest demands consideration of goals other than short-run consumer welfare. Antitrust is generally thought to be incapable of achieving these results because it rarely imposes duties to cooperate.121 As explained in Section I, however, antitrust has proven quite adept at requiring cooperation when it is really essential.122 And Sections II and III explained how antitrust may incorporate long-run consumer welfare and free speech values. There is thus no inherent need for specifically tailored legislative pronouncements when the general body of antitrust law is seen as flexible enough to reach all threats to consumer welfare.

Nevertheless, industry-specific consumer-welfare regulation arguably could provide substantial benefits by clearly identifying ex ante the rights and obligations of the competitors in a way that the general antitrust laws cannot. But that theoretical benefit is unlikely to be realized. Congress has demonstrated a singular inability, or at least an unwillingness, to draft regulatory legislation that is clear enough to obtain this benefit. As Justice Scalia wrote in his opinion for the Court in Iowa Utilities:

It would be a gross understatement to say that the 1996 [Telecommunications] Act is not a model of clarity. It is in many important respects a model of ambiguity or indeed even self contradiction. That is most unfortunate for a piece of legislation that profoundly affects a crucial segment of the economy worth tens of billions of dollars.123

In the absence of industry-specific regulation, litigation would often be necessary to resolve particular disputes. Given the inherent uncertainties in the antitrust laws, the notion that private parties could often settle differences in the shadow of those laws is unlikely.124 But industry specific regulation may be no better. The 1996 Telecommunications Act produced an explosion of litigation that remains unresolved five years later.125

Even when industry-specific regulation is interpreted in a way that provides clear rules to govern competitive behavior in information platform markets, the antitrust laws may remain a substantively better regulatory device. By their nature, industry- specific rules intended to enhance consumer welfare would necessarily require both (a) costly conduct to conform to the rules that in some situations would have no measurable consumer welfare benefit, and (b) permit some conduct that reduced consumer welfare but did not violate an ex ante rule.126 The problem would likely worsen over time as firms learned to walk the line along the rule, figuring out ways to comply with the letter of the law without providing the intended consumer welfare benefits. 127 For example, firms may learn the maximum permissible delays in the implementation of a rule-required behavior. All this is not to say that clear rules are never useful. But the resistance to using clear rules in antitrust doctrine generally should lead us to think twice before assuming that industry-specific legislation is a superior alternative to antitrust as a regulator of competition among information platforms.

#### AND won’t be enforced.

Stacey L. Dogan 08, Assistant Professor of Law at Northeastern University; and Mark A. Lemley, William H. Neukom Professor of Law at Stanford Law School, “Antitrust Law and Regulatory Gaming”, Stanford Law School, 2008, No. 367 John M. Olin Program in Law and Economics, Working Paper No. 367, https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1873&context=faculty\_scholarship

II. The Relative Efficiency of Antitrust and Regulation

The growing antitrust deference to regulation is cause for concern. Both antitrust and regulation are economic responses to market failures.46 Implemented correctly, both are designed to serve the ends of economic efficiency. 47 It is therefore reasonable to judge the relative efficacy of antitrust and regulation by economic criteria. And judged by those criteria, virtually all economists would agree that antitrust-overseen market competition is superior to industry regulation. In particular, none of the arguments the Court has offered as a reason to prefer regulation to antitrust withstand scrutiny.

Relative expertise. It is true, as the Court emphasized in Trinko and CreditSuisse, that antitrust courts are generalist courts, while regulatory agencies tend to specialize in a particular industry and its problems. That specialization should, all other things being equal, mean that expert regulators will do a better job than judges or juries of reaching the right result. But other things are far from being equal. Antitrust courts have two significant advantages over regulatory agencies when it comes to promoting competition.

First, antitrust courts are trying to promote economic efficiency, while regulators often aren’t. For decades, efficiency has served as the sole criterion on which to judge antitrust rules. And courts have had over a century in which to hone those rules to achieve that end. Without question, courts have made mistakes in the past. But there is a strong consensus among antitrust scholars that the wave of cases in the last 30 years has largely moved antitrust in the right direction, eliminating any significant risk that antitrust enforcement will do more harm than good.48 Scholars may fight over whether a Chicago School or a post-Chicago School approach will achieve the right result in specific cases, 49 but for the most part they are tinkering at the margins: the law and the scholarship have converged with respect to both the proper goals of antitrust and the general rules that will achieve those goals.

Regulation, by contrast, is frequently not even intended to achieve economic efficiency through competition. Occasionally that is because of a legislative judgment that competition is impossible, though the number of industries thought to be natural monopolies for which markets won’t work has shrunk dramatically in the past four decades.50 Industry regulation that excludes entry in order to promote a natural monopoly, as telephone regulation did before 1984, is not likely to achieve a competitive outcome.

More often, the goals of the legislators who establish regulatory agencies, or the goals of the regulators who run those agencies, are to achieve something other than competition. Indeed, many regulations are aimed precisely at eliminating competition, as was the government sponsored raisin cartel in Parker v. Brown 51 or any of its modern descendent crop-support programs administered by the Department of Agriculture. It should be obvious that regulations intended to reduce competition will not promote it. But even if the regulation is not directly inimical to competition, competition is frequently irrelevant to, or at best a minor consideration in, a regulator’s agenda. Regulators may care about the safety and efficacy of a drug, for example, and only incidentally about whether there is competition in the sale of that drug. They may seek to reduce traffic deaths or air pollution by mandating technology, regardless of the effect that mandate has on the price manufacturers can charge or the number of products they sell. These are laudable goals, to be sure, but they are not competition-related goals. An agency tasked with achieving these goals is likely to ignore threats to competition from the industry it regulates so long as those threats do not compromise its core mission. Thus, the state and local governments that enacted the privately-drafted National Fire Protection Code at issue in Allied Tube into law were interested in stopping fires; doubtless they thought little if at all about the competitive effects of the code, even though it turned out that the code was drafted by interested private parties with the purpose of impeding competition rather than promoting fire safety.52

Even those agencies whose mission expressly involves consideration of competition issues will not necessarily make it their first among potentially conflicting priorities. The SEC, for example, which as Justice Breyer pointed out is dedicated to improving market information and expressly considers competition among other issues in setting regulation,53 is first and foremost an investor-protection and information-disclosure agency, not an agency that investigates and weeds out cartels or other anticompetitive practices. It is unlikely to devote much in the way of time or resources to such issues, because even if it is tasked to consider such issues they do not reflect the agency’s primary purpose. Similarly, even an agency like the Federal Communications Commission that is directly focused on competitive conditions in a particular market may naturally pay attention primarily to that market, and give less if any attention to the effect its rules might have on competition in adjacent markets or competition from unanticipated new businesses. This arguably explains the FCC’s willingness to largely ignore the effects of its decisions on the Internet, for example: it is telecommunications, not the Internet, that the FCC is tasked to regulate.

Agencies that view competition as secondary, or view it through the lens of a particular industry’s characteristics and interests, are less likely to create and enforce rules that optimally encourage competition. 54 At a bare minimum, therefore, the industry-specific expertise of an agency must be balanced against the competition-specific expertise of the specialist antitrust agencies: the Federal Trade Commission (FTC) and the Department of Justice Antitrust Division.

#### Companies circumvent, it causes regulatory capture, rent seeking, AND links to the NB.

Lawrence J. Spiwak 21, President of the Phoenix Center for Advanced Legal and Economic Public Policy Studies. of the Phoenix Center for Advanced Legal and Economic Public Policy Studies, "A Poor Case for a ‘Digital Platform Agency’," Phoenix Center Perspectives, 21-02, 03/09/2021, pg. 8.

Conclusion

By nearly all accounts, the regulation of economic activity has warts. Firms are not passive recipients of regulation but adapt their practices to regulation to minimize impact. Regulators tend toward capture and their efforts often do more harm than good. As such, we may rightly demand compelling arguments for a new regulator, especially one with broad scope and unbridled power over the most important and dynamic segment of the modern economy. The Wheeler Proposal’s call for a Digital Platform Agency fails in that regard.

Antitrust, while imperfect, is grounded in precedent and is conducted in a dispassionate manner, thus avoids the pitfalls of regulatory capture and rent seeking accompanying regulation.58 Accordingly, if we are concerned that antitrust enforcement is lacking, then perhaps increasing the budgets of the DOJ and the FTC, coupled with more alert Congressional oversight, is the better policy choice at this time.59

### Rulemkaing CP---2AC

#### Agencies inexperienced with competition causes delay---stifles innovation

Lina Khan 19; Chairperson at the Federal Trade Commission, JD from Yale Law School; “The Separations of Platforms and Commerce,” *Columbia Law Review* 119(4), p. 973-1098

Moreover, even disputes between well-heeled corporations can take years to resolve. For example, in 2011 Bloomberg filed a complaint with the FCC, alleging that Comcast was improperly grouping Bloomberg’s channel in an unfavorable cluster of channels.679 Since the FCC had conditioned Comcast’s acquisition of NBC on the basis of fair “neighborhooding” of independent news networks, Bloomberg claimed that Comcast was in violation of its commitments.680 Granted that this dispute was adjudicated outside the auspices of section 616 and the agency’s ALJ, the FCC took over two years to reach a final decision.681 Given the importance of timeliness in high-tech markets—where a slight delay can render a remedy obsolete—even a two-year process in digital markets will likely come at the expense of innovation.

#### Expert agencies are worse than antitrust courts---every metric goes aff

Joshua D. Wright 13, Professor at George Mason University School of Law and Department of Economics, and Angela M. Diveley, Associate at Freshfields Bruckhaus Deringer in Washington, DC, “Do expert agencies outperform generalist judges? Some preliminary evidence from the Federal Trade Commission”, 4/1/13, Lexis

Conclusions

Expertise has long been the touchstone of administrative agency performance. In the context of antitrust agencies, like others, the expert inputs are translated into outputs including adjudicatory decisions, rulemaking, consents, advocacy, and amicus briefs. An often overlooked aspect of understanding agency performance and its relationship to expertise is institutional design. The so-called expertise hypothesis posits that the institution with more expert inputs will consistently produce higher quality outputs. That assumption suffers from the Nirvana Fallacy as it lacks a basis without an analysis of the institutions and processes translating those inputs to outputs. Inability of an agency to translate its expertise into high-quality decision-making renders it at best ineffective and at worst costly to society, and institutional design has the potential to hinder the flow of information from an agency’s staff to its decision-makers.

In the context of US antitrust law, many commentators have recently called for an expansion of the FTC’s adjudicatory decision-making authority pursuant to Section 5 of the FTC Act, increased Commission rulemaking, and carving out exceptions for the agency from increased burdens of production facing private plaintiffs. These claims are often expressly grounded in the expertise hypothesis. The relevant question is whether the expert inputs available to generalist federal district court judges through expert evidence, amicus briefs, and economic training, among other sources of such expertise, translate to higher quality outputs and better performance than produced by the Commission in its role as an adjudicatory decision-maker.

Many appear to assume that agencies have courts beat on this margin. To our knowledge, while oft-cited as a reason to increase the discretion of agencies and the deference afforded them by reviewing courts, no one has provided empirical support for this claim. We seek to fill that gap, and contrary to the expertise hypothesis, we find the evidence suggests the Commission does not perform as well as generalist judges in its adjudicatory antitrust decision-making role. Furthermore, while the available evidence is more limited, there is no clear evidence the Commission adds significant incremental value to the ALJ decisions it reviews. In light of these findings, there is little empirical basis for the various proposals to expand agency authority and deference to agency decisions. More generally, our results highlight the need for research on the relationship between institutional design and agency expertise in the antitrust context.

### AT: Democracy NB

#### Democracy is resilient---ebbs and flows are natural, but easily overcome.

Sarah Repucci & Amy Slipowitz 21, Vice President of Research & Analysis at Freedom House, M.A. from New York University; Research Manager for Freedom in the World at Freedom House, M.A. in International Affairs from the School of International and Public Affairs at Columbia University, “Democracy under Siege,” Freedom House, 2021, https://freedomhouse.org/report/freedom-world/2021/democracy-under-siege

A litany of setbacks and catastrophes for freedom dominated the news in 2020. But democracy is remarkably resilient, and has proven its ability to rebound from repeated blows.

A prime example can be found in Malawi, which made important gains during the year. The Malawian people have endured a low-performing democratic system that struggled to contain a succession of corrupt and heavy-handed leaders. Although mid-2019 national elections that handed victory to the incumbent president were initially deemed credible by local and international observers, the count was marred by evidence that Tipp-Ex correction fluid was used to alter vote tabulation sheets. The election commission declined to call for a new vote, but opposition candidates took the case to the constitutional court. The court resisted bribery attempts and issued a landmark ruling in February 2020, ordering fresh elections. Opposition presidential candidate Lazarus Chakwera won the June rerun vote by a comfortable margin, proving that independent institutions can hold abuse of power in check. While Malawi is a country of 19 million people, the story of its election rerun has wider implications, as courts in other African states have asserted their independence in recent years, and the nullification of a flawed election—for only the second time in the continent’s history—will not go unnoticed.

Taiwan overcame another set of challenges in 2020, suppressing the coronavirus with remarkable effectiveness and without resorting to abusive methods, even as it continued to shrug off threats from an increasingly aggressive regime in China. Taiwan, like its neighbors, benefited from prior experience with SARS, but its handling of COVID-19 largely respected civil liberties. Early implementation of expert recommendations, the deployment of masks and other protective equipment, and efficient contact-tracing and testing efforts that prioritized transparency—combined with the country’s island geography—all helped to control the disease. Meanwhile, Beijing escalated its campaign to sway global opinion against Taiwan’s government and deny the success of its democracy, in part by successfully pressuring the World Health Organization to ignore early warnings of human-to-human transmission from Taiwan and to exclude Taiwan from its World Health Assembly. Even before the virus struck, Taiwanese voters defied a multipronged, politicized disinformation campaign from China and overwhelmingly reelected incumbent president Tsai Ing-wen, who opposes moves toward unification with the mainland.

More broadly, democracy has demonstrated its adaptability under the unique constraints of a world afflicted by COVID-19. A number of successful elections were held across all regions and in countries at all income levels, including in Montenegro, and in Bolivia, yielding improvements. Judicial bodies in many settings, such as The Gambia, have held leaders to account for abuses of power, providing meaningful checks on the executive branch and contributing to slight global gains for judicial independence over the past four years. At the same time, journalists in even the most repressive environments like China sought to shed light on government transgressions, and ordinary people from Bulgaria to India to Brazil continued to express discontent on topics ranging from corruption and systemic inequality to the mishandling of the health crisis, letting their leaders know that the desire for democratic governance will not be easily quelled.

The Biden administration has pledged to make support for democracy a key part of US foreign policy, raising hopes for a more proactive American role in reversing the global democratic decline. To fulfill this promise, the president will need to provide clear leadership, articulating his goals to the American public and to allies overseas. He must also make the United States credible in its efforts by implementing the reforms necessary to address considerable democratic deficits at home. Given many competing priorities, including the pandemic and its socioeconomic aftermath, President Biden will have to remain steadfast, keeping in mind that democracy is a continuous project of renewal that ultimately ensures security and prosperity while upholding the fundamental rights of all people.

Democracy today is beleaguered but not defeated. Its enduring popularity in a more hostile world and its perseverance after a devastating year are signals of resilience that bode well for the future of freedom.

### Prohibit PIC---2AC

### FTC Tradeoff DA---2AC

#### No resources AND thumpers

Michael Kades 21, Director of Markets and Competition Policy, former attorney at the Federal Trade Commission; Equitable Growth Foundation, “Competitive Edge: Congress Needs to Restore the Federal Trade Commission’s Authority to Seek Monetary Remedies When Companies Break The Law,” 7/28/2021, <https://equitablegrowth.org/competitive-edge-congress-needs-to-restore-the-federal-trade-commissions-authority-to-seek-monetary-remedies-when-companies-break-the-law/>

As the report explains, “Rather than deter anticompetitive behavior, current legal standards do the opposite: They encourage it because such conduct is likely to escape condemnation, and the benefits of violating the law far exceed the potential penalties.” In the face of such warnings, it is a particularly bad time for the Supreme Court to unanimously reject 40 years of lower court rulings and conclude that the Federal Trade Commission can neither force companies to give up the profits they earned by violating the law nor compensate the victims of those violations. (The first remedy is called disgorgement, and the second remedy is called restitution.)

Whether the Supreme Court in April correctly interpreted the statute at issue in the case, AMG Capital Management LLC v. Federal Trade Commission, is less important than its implications. Professor [Andy Gavil discusses a potential silver lining](https://equitablegrowth.org/competitive-edge-the-silver-lining-for-antitrust-enforcement-in-the-supreme-courts-embrace-of-textualism/) in the Supreme Court’s decision—the glass-half-full approach. He argues that if the Supreme Court faithfully applies its approach to statutory interpretation, then it could open the door to broader application of the antitrust laws.

I look at the direct impact of the decision—the glass-half-empty approach. I argue that the decision deprives the antitrust agency of a critical, albeit imperfect, weapon that has deterred anticompetitive conduct particularly in the pharmaceutical industry. Although it has used disgorgement in competition cases sparingly, those awards have deterred the entire industry from engaging in the challenged conduct.

Before the recent Supreme Court decision, the disgorgement awards in competition cases went far beyond the impact in a single case. The savings include benefits from the conduct that did not occur. If the commission cannot seek monetary remedies, then companies will keep the rewards of their illegal conduct. Perversely, the companies causing the greatest harm will benefit the most from April’s decision.

The impact reaches even further. Without the threat of a disgorgement award, companies are more likely to drag out litigation and tax the FTC’s limited resources. Because the commission will spend more resources on egregious cases to reach weaker results, it will have fewer resources to challenge anticompetitive conduct in other areas and, for example, could affect enforcement in merger cases or in the high-tech industry.

#### No spillover between parts of the FTC

Spencer Weber Waller 5, Professor of Law and Director of the Institute for Consumer Antitrust Studies at the Loyola University Chicago School of Law, “In Search of Economic Justice: Considering Competition and Consumer Protection Law”, Loyola University Chicago Law Journal, 36 Loy. U. Chi. L.J. 631, Winter 2005, Lexis

Despite this more comprehensive mission, the FTC is organized in a way that tends to emphasize the separation of these fields, rather than the common elements of the agency's mission. The FTC has a Bureau of Competition and a separate Bureau of Consumer Protection, with a Bureau of Economics to support the work of both endeavors. The Bureau of Competition ("BC") primarily engages in the investigation and enforcement of mergers and complex civil antitrust cases with a recent emphasis on intellectual property and health care issues. The Bureau of Consumer Protection ("BCP") primarily investigates and challenges outright fraudulent conduct. 9 The FTC website details recent BCP activity involving Internet sales, telemarketing, false health and fitness claims, identity theft and similar issues. 10 These are all very different issues from the day-to-day focus of the competition staff. This basic split is further mirrored in the Bureau of Economics ("BE"), where the staff tends to specialize in either competition or consumer protection. Any crossover of staff and cooperation occurs primarily in competition advocacy before legislatures or regulatory agencies, and not in case selection and investigation.

### AT: Algorithms Impact

#### No impact---Fears of algorithmic bias are overblown

Rainie 17 – Director of internet and technology research at Pew Research Center, quoting various leading AI experts

Lee Rainie and Janna Anderson, Theme 2: Good things lie ahead in Code-Dependent: Pros and Cons of the Algorithm Age, Pew Research Center, 2017, <https://www.pewresearch.org/internet/2017/02/08/theme-2-good-things-lie-ahead/>

Some respondents who predicted a mostly positive future said algorithms are unfairly criticized, noting they outperform human capabilities, accomplish great feats and can always be improved.

An anonymous professor who works at New York University said algorithm-based systems are a requirement of our times and mostly work out for the best. “Automated filtering and management of information and decisions is a move forced on us by complexity,” he wrote. “False positives and false negatives will remain a problem, but they will be edge cases.”

An anonymous chief scientist wrote, “Whenever algorithms replace illogical human decision-making, the result is likely to be an improvement.” And an anonymous principal consultant at a top consulting firm wrote, “Fear of algorithms is ridiculously overblown. Algorithms don’t have to be perfect, they just have to be better than people.”

### Capitalism K---2AC

#### Growth is sustainable AND transition fails.

Kelsey Piper 21, Staff Writer, Vox. BS, Symbolic Systems, "Can we save the planet by shrinking the economy?" Vox, 08/02/2021, https://www.vox.com/future-perfect/22408556/save-planet-shrink-economy-degrowth/

Most of the world is very poor. Billions of people go hungry, can’t afford a doctor when they get sick, don’t have adequate shelter and sanitation, and struggle to exercise the freedoms essential to a good life because of material deprivation.

But for all the immiseration around us, one thing is undeniable: For the past several centuries — and especially for the past 70 years, since the end of World War II — the world has been getting much richer.

That economic boom means a lot of things. It means cancer treatments and neonatal intensive care units and smallpox vaccines and insulin.

It means, in many parts of the world, houses have indoor plumbing and gas heating and electricity.

It means that infant mortality is down and life expectancies are longer.

But an increasingly wealthy world also means we eat more meat, mostly from factory-farmed animals. It means we emit lots more greenhouse gases. It means that consumers in developed countries buy a lot and throw away a lot.

In other words, it means a lot of good things and certainly some bad things as well.

Mainstream climate and environmental policy has developed over the years with a certain assumption — that we can get rid of the bad things while still preserving the good things. That is, it’s sought to figure out how to reduce carbon emissions, preserve ecosystems, and save endangered species while continuing to improve material living conditions for everyone in the world.

But to a vocal slice of climate activists, that approach seems increasingly doomed. The degrowth movement, as it’s called, argues that humanity can’t keep growing without driving humanity into climate catastrophe. The only solution, the argument goes, is an extreme transformation of our way of life — a transition away from treating economic growth as a policy priority to an acceptance of shrinking GDP as a prerequisite to saving the planet.

At the core of degrowth is the climate crisis. Degrowth’s proponents argue that to save Earth, humans need to shrink global economic activity, because at our current levels of consumption, the world won’t hit the IPCC target of stabilizing global temperatures at no more than 1.5 degrees of warming. The degrowth movement argues that climate change should prompt a radical rethinking of economic growth, and policymakers serious about climate change should try to build a livable world without economic growth fueling it.

It’s a bold, even romantic vision. But there are two problems with it: It doesn’t add up — and it would be nearly impossible to implement.

Addressing climate change will take genuinely radical changes to how our society works. Stirring as it might be to some, though, degrowth’s radicalism won’t fix the climate. Degrowth is most compelling as a personal ethos, a lens on your consumption habits, a way of life. What it’s not is a serious policy program to solve climate change, especially in a world where billions still live in poverty.

The basics of degrowth

Pinning down what degrowth means can be tricky because degrowthers often differ on details. But there are some common threads to their thought.

In general, degrowthers believe that in the modern world, economic growth has become unmoored from improvements in the human condition.

Jason Hickel, an anthropologist at the London School of Economics and the author of Less Is More: How Degrowth Will Save the World, has emerged as one of the leading spokespeople for the movement. To Hickel, the case for degrowth goes like this: The world is producing too much greenhouse gases. It is also overfishing, is overpolluting, is unsustainable in a dozen ways, from deforestation to plastic accumulating in the oceans.

Scientists have made impressive progress on technologies that, he argues, should have been sufficient to address the climate crisis — think solar panels, meat alternatives, eco-friendly houses. But because wealthy societies are so focused on growing the economy, those gains have been immediately plowed back into the economy, producing more stuff for the same ecological footprint, yes, but not actually shrinking the ecological footprint.

Hickel argues that this problem is unsolvable within our current framework. “In a growth-oriented economy,” he writes in Less Is More, “efficiency improvements that could help us reduce our impact are harnessed instead to advance the objectives of growth — to pull ever-larger swaths of nature into circuits of extraction and production. It’s not our technology that’s the problem. It’s growth.”

His solution? To abandon the lodestar of economic policy in nearly every country, which is to aim for economic growth over time, increasing wealth per person and expanding the ability of their citizens to purchase the things they want and need. Instead, Hickel argues, rich countries should focus on getting emissions to zero — even if the result is a much-contracted economy.

If that sounds unappealing, he devoted much of the book — and much of our interview — to arguing that it wouldn’t be. He points out that some countries, like the United States, are rich but get very little for their spending, in terms of national well-being; poorer countries like Spain have better health care systems. He argues that current levels of well-being could be maintained at a tenth of Finland’s current GDP — assuming that society also adopted wide-scale redistribution and socialist labor policies.

At the heart of Hickel’s argument is an idea that divides degrowthers and their critics: the concept of “decoupling” growth from environmental impact. Hickel and his fellow degrowthers are skeptical that economic growth as we know it can ever truly be achieved without accompanying growth in emissions.

But critics argue that not only is it possible — it’s already been happening. For the past decade, as many countries have transitioned to green energy, they have successfully seen their emissions shrink while their GDP has grown.

“There have been really big changes since 2005,” when people were debating whether decoupling was even possible, Zeke Hausfather, a climate scientist at the Breakthrough Institute, told me. “Green energy has gotten cheap. Solar power is the cheapest energy at the margins in every country today. Global coal use has peaked.” His research finds evidence of “absolute decoupling” — emissions shrinking while GDP grows — in 32 countries, including the United States, the United Kingdom, and Germany.

Degrowthers I spoke to don’t dispute that decoupling is possible. But they argue it won’t be enough to shrink emissions as rapidly as they need to. And there’s a compelling bit of evidence for that view: Even as some countries have decoupled, others have increased emissions, and overall atmospheric carbon is at its highest level ever recorded.

Where an optimist might see, in the decoupling of the past few decades, signs that growth and climate solutions can coexist, a pessimist might find the degrowth diagnosis more persuasive: that our growth-focused society clearly isn’t up to the task of solving climate change.

The pessimists have picked up momentum of late. It’s true, in one sense, that degrowth is a somewhat fringe idea: No politician has endorsed it, and no serious policy proposals based on it have been put forth. But degrowth has nonetheless drawn sympathy in some quarters — including among prominent climate thinkers.

Steven Chu, who served as secretary of energy under President Obama, has endorsed it, arguing, “You have to design an economy based on no growth or even shrinking growth.”

More than 11,000 scientists signed William Ripple’s 2019 letter “World Scientists’ Warning of a Climate Emergency,” which argues “our goals need to shift from GDP growth and the pursuit of affluence toward sustaining ecosystems and improving human well-being by prioritizing basic needs and reducing inequality.”

And a recent paper in Nature explored how a “degrowth” of 0.5 percent of GDP per year might interact with climate and emissions targets, arguing that while “substantial challenges remain regarding political feasibility,” such approaches should be “thoroughly considered.”

The tension at the heart of degrowth: Can we fix global poverty without economic growth?

One big problem with degrowth is this simple fact: In the coming decades, most carbon emissions won’t be coming from rich countries like the US — they’ll be happening in newly middle-income countries, like India, China, or Indonesia. Already, developing nations account for 63 percent of emissions, and they’re expected to account for even more as they develop further and as the rich world decarbonizes.

Even if emissions in rich countries go to zero very soon, climate change is set to worsen as poorer countries increase their own emissions.

That will, of course, have deeply negative climate impacts. But the alternative is a nonstarter — should the world really prioritize curbing emissions and economic growth if it meant suppressing the growth of those countries?

Degrowthers see no dilemma here. What Hickel envisions is global movement in two directions: Poor countries could develop up to a certain level of prosperity and then stop; rich countries could develop down to that level and then stop. Thus, climate catastrophe could be averted, all while making the world’s poor more prosperous.

“Rich countries urgently need to reduce their excess energy and resource use to sustainable levels so our sisters and brothers in the global South can live well too,” Hickel put it. “We live on an abundant planet and we can all flourish on it together, but to do so we have to share it more fairly, and build economies that are designed around meeting human needs rather than around perpetual growth.”

From a climate change perspective, though, there’s a problem. First, it means that degrowth would do nothing about the bulk of emissions, which are occurring in developing countries.

Second, the global economy is more interconnected than Hickel implies. When Covid-19 hit, poor countries were devastated not just by the virus but by the aftershocks of virus-induced slowdowns in consumption in rich countries.

There’s some genuine appeal to the idea of an end to “consumerism,” but the pandemic offered a taste of how a sudden drop in rich-world consumption would actually affect the developing world. Covid-19 dramatically curtailed Western imports and tourism for a time. The consequences in poor countries were devastating. Hunger rose, and child mortality followed.

Covid-19, of course, wreaked direct economic havoc at the same time, with lockdowns having an especially negative impact on some poor countries; the effects of the pandemic and international demand shock were combined, and in some cases they’re hard to separate. But the United Nations, the World Bank, and expert analyses point to the decline in global consumption as a significant part of the picture.

Degrowthers reject this concern on two fronts: First, they argue that a sustained, deliberate reduction in consumption wouldn’t be anything like a recession. Recessions, they agree, are really bad, but that’s because consumption falls in affected sectors, instead of being targeted at things that don’t improve well-being. Degrowth, they say, would be different.

Second, they contend that there is some path to economic growth in poor countries that doesn’t rely on trade with rich ones — certainly some countries managed economic growth when the whole world was poor, after all.

Hickel’s perspective is that most trade between rich and poor countries is extractive, not mutually beneficial — and that maybe when that dynamic ceases, poor countries will have the chance for the catch-up growth they merit. That’s one take. But it means that degrowth’s case for not crushing the poor world is predicated on a speculative take on how those countries can grow — one that democratically elected leaders in those countries largely don’t share.

What GDP doesn’t capture — and what it can tell us

In a way, the debate over degrowth is a debate over the meaning of one economic indicator: gross domestic product (GDP).

GDP measures the transactions within an economy — all the occasions when money changes hands in exchange for goods and services. It’s not wealth, but it’s one of the primary ways we measure wealth.

It certainly doesn’t capture everything of value. When parents spend a quiet weekend at home teaching their children to read, for example, nothing GDP-generating has happened — but value has certainly been created.

Degrowth articles burst with such examples. GDP, they love to point out, includes the production of things like nerve gas, even though that has no social value. And it doesn’t include storytelling, singing, gardening, and other simple human pleasures.

“If our washing machines, fridges, and phones lasted twice as long, we would consume half as many (thus the output of those industries would decline), but with zero reduction in our access to those goods,” Hickel told me. If everyone worked half the hours they currently do, and made half the income, they might mostly be better off — at least, assuming that their basic needs were still met.

“We propose policies like a living wage, a maximum income ratio, wealth taxes, etc. to accomplish this,” Hickel told me. “Given all of this, the language of poverty really gets it wrong: longer-lasting products, living wages, shorter working weeks, better access to public services and affordable housing — we are calling for the opposite of poverty. Yes, industries like SUVs and fast fashion would decline, but that doesn’t mean poverty. We can replace them with public transportation and longer-lasting fashion, thus meeting everyone’s needs.”

There’s a lot of speculation here, and a lot of what degrowth’s critics would call hand-waving. Degrowth is fundamentally premised on the claim that we can cease to focus on growth while getting better than ever at addressing human needs. If that’s true, then that would certainly be great news.

But in many ways, it’s a vision more wildly optimistic — disconnected from actual policy results — than any of the more standard “sustainable development” models degrowthers criticize for being out of touch.

First, in the world today, there’s an extremely strong association between growth and welfare outcomes of every kind. GDP, while imperfect, is a better predictor of a country’s welfare state, outcomes for poor citizens in that country, and well-being measures like leisure time and life expectancy than any other measure.

“GDP does leave out non-commercialized activities that are welfare-enhancing,” economist Branko Milanovic writes in a rebuttal of degrowth:

It is, like every other measure, imperfect and one-dimensional. But ... it is imperfect at the edges while fairly accurate overall. Richer countries are countries that are generally better-off in almost all metrics, from education, life expectancy, child mortality to women’s employment etc. Not only that: richer people are also on average healthier, better educated, and happier. Income indeed buys you health and happiness. (It does not guarantee that you are a better person; but that’s a different topic.) The metric of income or GDP is strongly associated with positive outcomes, whether we compare countries to each other, or people (within a country) to each other.

The things degrowthers care about — leisure time, health care, life expectancy — are strongly correlated with societal wealth. The generosity of a welfare state and the availability of transfers to a state’s poorest people are also strongly correlated with societal wealth. Innovation, discovery, invention, and medical technology improvements are also strongly correlated with societal wealth.

The strong correlation between child mortality and GDP per capita is apparent on the above graph. There are some outliers — some countries outperform or underperform their GDP somewhat, in terms of preventing child deaths — but in general, wealth strongly predicts child survival. No single, simple medical intervention causes the difference. Wealthier societies on average get better health outcomes across the board.

This graph looks at child mortality not just by comparing rich countries to poor ones but also by comparing countries over time, as they get richer: Getting richer improves outcomes for children.

Leisure time, too, has increased — and hours worked have declined — as the world has gotten wealthier.

It might be possible in principle to do better — to decouple, if you will, health and well-being from access to material resources, so that everyone is well-off with many fewer resources.

But the examples degrowthers point to remain speculative ones; if we ought to be skeptical, as degrowthers argue we should be, about the decoupling of wealth from ecological impact, we ought to be at least as skeptical about the prospects of decoupling wealth from living standards.

“In the end, economic growth is about the production of stuff that people need and then the consumption of those things by the people who need it,” Max Roser at Our World in Data, a research institute focused on finding, visualizing, and communicating historical economic and health data, told me. He added:

The money aspect, and the abstract concept of GDP, distract us and make it less obvious what it’s actually about. People want to have enough food, they need to go to the doctor, they need childcare, they want a good education. People need lots of stuff, and one thing that people care about are goods and services, and they need to be produced, and economic growth is about an increase in the quality and quantity of the goods and services that people need.

There’s also the knotty problem of who gets to decide which goods and services people choose to spend their money on. Many of the climate scientists I spoke to shared Hickel’s impatience for many specific carbon-intensive modern industries. “I’m not going to defend bitcoin,” the Breakthrough Institute’s Hausfather told me. (The cryptocurrency has attracted intense criticism for being astoundingly carbon-intensive.)

But there is a lot in between bitcoin and basic subsistence needs. And “enough for everyone who needs it” inherently requires value judgments about what people really need, and what things they value that are frivolous luxuries. That’s why so many anti-poverty programs have moved away from giving people “what they need” toward just giving them cash — that is, giving them wealth, which they can choose to spend however they please.

“Even poor people have so many needs for goods and services that you can’t possibly put them on a list and say, ‘Now we’re done here,’” Roser told me. “That’s the beauty of money, that you can just go out there and get what you need rather than what some researcher determines are your needs.”

Degrowth is unrealistic — and gaining traction

As a policy program, degrowth suffers from being both too radical and not radical enough.

There’s a lot of broad-brush policy prescriptions in the degrowth lit, but those details never really add up.

While it’s not a short book, Less Is More feels surprisingly sparse when it comes to envisioning how the changes it recommends could be brought about. The chapter on solutions recommends cutting the workweek and changing tax policy — two solid proposals — but then rounds that out by recommending ending technological obsolescence, advertising, food waste, and student debt.

I’m not particularly opposed to those policies. But they seem laughably inadequate for the magnitude of the task at hand: confronting the climate crisis. Degrowth successfully persuades that guiding humanity and our planet through the 21st century will be really, really hard — but not in a way degrowth particularly solves.

Where degrowth literature is relentlessly pessimistic about the prospect of our problems being solved under our current economic system, it turns oddly optimistic about the prospect that they’ll be solved once we embrace a different way of viewing wealth and progress. If cutting carbon emissions fast enough to matter requires shrinking the global economy by 0.5 percent a year indefinitely, starting right now, as the Nature paper estimates, that’ll take policy measures much larger and more ambitious than any proposed in Less Is More.

“If we are to avert catastrophic warming, we have to lower carbon emissions by a factor of two within the next 10 years. I find it highly implausible that capitalism/market economics will be abandoned by the world on that time frame,” Pennsylvania State University climatologist Michael Mann told me. “That means we have to act on the climate crisis within the framework of the current system.”

In that sense, there’s actually something anti-radical about any climate plan so radical that it can’t be concretely brought about in the next decade.

And yet, implausible as it is, degrowth is gaining a foothold in intellectual and policy circles. What accounts for its seemingly growing popularity? This was a question that puzzled me until I heard the same answer from one degrowth advocate and one opponent: that it’s not, really, exactly about climate.

“It started in the 1990s in France, picking up on radical European politics in the 1970s,” Giorgos Kallis, a researcher studying degrowth at the Universitat Autònoma de Barcelona, told me. “There was an in-between political space there — radical greens, putting much more emphasis on localized production, emphasis on conviviality and autonomy. This is a discourse that comes from them. It wasn’t just about avoiding a particular environmental problem. It was a holistic proposal.”

That was also the diagnosis of Zion Lights, a former spokesperson for Extinction Rebellion, who has become one of the climate movement’s internal critics, arguing that the movement focuses too much on environmentalist-friendly proposals that have nothing to do with climate.

“It has become difficult to talk about making energy policies for combating climate change, for example, without being told that such thinking is actually irrelevant because it doesn’t involve system change,” she recently argued. “We need cheap, clean energy at scale and we need it now.”

In that sense, a good analogy for degrowth might actually be locavorism — the movement that focuses on eating food grown locally. It’s popular with environmentalists, both those whose convictions are about climate change and those who long for a return to the land. Its actual climate impacts are limited or even negative — for some products, it’s better for them to be grown in their optimal environment even with carbon-intensive shipping — and it definitely does less for the climate than, for example, going vegan. But it retains its allure.

How to fight climate change while building good human societies

Degrowth’s radicalism isn’t where I part ways with it: The future will almost certainly require us to eat much less meat, dramatically change land use, and potentially invest a significant chunk of society’s resources in mitigation indefinitely.

But I don’t tend to see such efforts as fundamentally futile. Degrowthers do — even when there have been significant successes.

Climate scientists have spent a long time warning the world about climate change, but they nonetheless tend to sound a more optimistic note than degrowthers like Hickel. “It’s undoubtedly a monumental challenge,” Mann told me. “We have the technology to solve the problem — renewable energy, smart grid technology, and existing energy storage. We just need the political will to act.”

Take solar panels. Two decades ago, cheap solar panels were just a dream. Now they’re everywhere and have become a crucial tool in the fight against climate change.

Not only that, solar panels have democratized electricity. Just one small-scale instance: In rural Kenya, you can see donkeys saddled with solar panels so that farmers can charge their phones. And there are many such examples that count as a win for both human progress and our fight against climate change.

It should go without saying that since rich governments got us into this climate mess, they should be at the forefront of getting us out of it. We need massive investments in carbon capture, green energy, plant-based meat, mitigation, and straight-up cash transfers to poor countries disproportionately affected by the climate crisis.

Many of the researchers I spoke to were open to the idea that in the long run, humanity would need to rethink many of our cherished assumptions about how economies work, in order to build a civilization that can flourish for thousands or millions of years. They didn’t reject degrowth as a philosophical contribution to the question of what future human civilizations should care about.

But such articulations of different philosophies of human flourishing should not be mistaken for public policy.

We don’t have very long, and we need to decarbonize quickly. We have technologies that have made a big difference already, and they must be made available on an unprecedented scale. We have more speculative solutions, technological and societal, and we should be prepared to try those, too. The scale of the problem is such that we need to act now — and we need to be clear-eyed about which ideas truly move the needle.

#### 2. Growth outruns recurrent blackball risks and shifts public preference to optimal existential risk mitigation---unlocks infinite future value.

Aschenbrenner ’20 [Leopold; September 6; Research Fellow in Economics at the Forethought Foundation and Global Priorities Institute at the University of Oxford, B.A. from Columbia University; Global Priorities Institute, “Existential risk and growth,” no. 6]

Secondly, note that this existential risk Kuznets curve appears in the transition dynamics of the optimal allocation. Considering that existential risk mitigation is a global public good, it is unlikely resources are allocated to safety optimally in the real world. As such, this should not be taken to be a prediction of what a particular country with a particular set of institutions will do with regard to existential risk.

Nevertheless, there are a number of reasons why we might still be interested in the transition dynamics under the (impatient) optimal allocation. For one, since there are very long timescales involved here, it is very hard to know (and thus model) what government and societal institutions will evolve to deal with existential risk. However, the ideal these institutions will likely aim at is the optimal allocation. The optimal allocation might thus be a rough proxy for the real-world allocation.

Moreover, the (impatient) optimal allocation represents what I would call the “democratic possibilities frontier” or the “impatient public possibilities frontier.” Those who are principally concerned about the long-run future of humanity and advocate for a zero rate of pure time preference might want us to spend as much as possible on safety in order to avoid existential catastrophe and enable human flourishing millions of years into the future. Indeed, even in the Hamiltonian of the optimal allocation, the relative value of life ˜vt is a discounted term; the lower your discount rate ρ, the more you would want to spend on safety. However, the broader public is not so patient. As the empirical evidence cited earlier shows, people tend to have a (relatively large) positive rate of pure time preference; the public is impatient. Even perfectly designed institutions that take into account existential risk externalities will ultimately be constrained by the degree to which society actually cares about the future—they will be constrained by an impatient public. The existential risk Kuznets curve illustrates the implications of this impatience. On the one hand, this impatience results in a period of initially rising levels of risk. For example, this might mean that the arguably rising level of existential risk of the past century is not necessarily a market failure, but may well be part of the optimal path given positive pure time preference. On the other hand, rising standards of living lead even the most impatient public to start caring more about safety and averting an existential catastrophe. This leads workers and scientists to be shifted to the safety sector, eventually causing the hazard rate δ to exponentially decline. Even if people are impatient, if you make them well off enough, they will start caring about existential risk.

Seeing the arguably rising levels of existential risk in the past century, some might call for an end to economic growth. Yet this existential risk Kuznets curve indicates that stopping economic growth would be deleterious: it would simply freeze the hazard rate at a high level, leading to a fatal catastrophe sooner or later. Economic growth enables even an impatient public with a high rate of pure time preference to start caring about life, thus ultimately reducing risk and even leading to positive M ∞.

Some prominent thinkers have previously posited that humanity is passing through a unique period with an elevated risk of technological catastrophe. Sagan (1994) calls this the “time of perils.” Parfit (2011, p. 616), concurs:

We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy.

This existential risk Kuznets curve provides theoretical evidence that grounds the intuition that we are living in a “time of perils.” We may be economically advanced enough to have created the means for our permanent destruction, but not economically advanced enough to care enough about decreasing this existential risk.

This “time of perils” has profound implications. For instance, those alive today who care about preserving the long-term future of humanity may have extraordinary altruistic leverage. By working to reduce existential risk now (increasing the resources dedicated to safety), they can reduce the area under the “hump” of the hazard rate δ. This in turn increases M∞, unlocking tremendous value. Moreover, since so few resources are dedicated to safety at the moment, there are likely very high marginal value opportunities available to work on safety. This is a unique situation. Suppose existential risk did not decline to zero exponentially: then M∞ = 0 regardless—the existential risk curve would never bend—so reducing risk now would not change the probability of a long and flourishing future of humanity. And if existential risk did not initially increase, it would never be such a substantial challenge and there wouldn’t be such high marginal value opportunities to work on reducing it.

#### The ALT fails---it cannot change mindsets.

Thomas Wiedmann et al. 20, Sustainability Assessment Program, School of Civil and Environmental Engineering, UNSW Sydney; Manfred Lenzen, ISA, School of Physics, The University of Sydney; Lorenz T. KeyßEr, Institute for Environmental Decisions, Department of Environmental Systems Science, ETH Zürich; Julia K. Steinberger, Sustainability Research Institute (SRI), School of Earth and Environment, University of Leeds, "Scientists’ Warning on Affluence," Nature Communications, Vol. 11, 06/19/2020, Springer.

Growth imperatives are active at multiple levels, making the pursuit of economic growth (net investment, i.e. investment above depreciation) a necessity for different actors and leading to social and economic instability in the absence of it7,52,60. Following a Marxian perspective as put forward by Pirgmaier and Steinberger61, growth imperatives can be attributed to capitalism as the currently dominant socio-economic system in affluent countries7,51,62, although this is debated by other scholars52. To structure this topic, we will discuss different affected actors separately, namely corporations, states and individuals, following Richters and Siemoneit60. Most importantly, we address the role of the super-affluent consumers within a society, which overlap with powerful fractions of the capitalist class. From a Marxian perspective, this social class is structurally defined by its position in the capitalist production process, as financially tied with the function of capital63. In capitalism, workers are separated from the means of production, implying that they must compete in labour markets to sell their labour power to capitalists in order to earn a living.

Even though some small- and medium-sized businesses manage to refrain from pursuing growth, e.g. due to a low competition intensity in niche markets, or lack of financial debt imperatives, this cannot be said for most firms64. In capitalism, firms need to compete in the market, leading to a necessity to reinvest profits into more efficient production processes to minimise costs (e.g. through replacing human labour power with machines and positive returns to scale), innovation of new products and/or advertising to convince consumers to buy more7,61,62. As a result, the average energy intensity of labour is now twice as high as in 195060. As long as a firm has a competitive advantage, there is a strong incentive to sell as much as possible. Financial markets are crucial to enable this constant expansion by providing (interest-bearing) capital and channelling it where it is most profitable58,61,63. If a firm fails to stay competitive, it either goes bankrupt or is taken over by a more successful business. Under normal economic conditions, this capitalist competition is expected to lead to aggregate growth dynamics7,62,63,65.

However, two factors exist that further strengthen this growth dynamic60. Firstly, if labour productivity continuously rises, then aggregate economic growth becomes necessary to keep employment constant, otherwise technological unemployment results. This creates one of the imperatives for capitalist states to foster aggregate growth, since with worsening economic conditions and high unemployment, tax revenues shrink, e.g. from labour and value-added taxes, while social security expenditures rise60,62. Adding to this, states compete with other states geopolitically and in providing favourable conditions for capital, while capitalists have the resources to influence political decisions in their favour. If economic conditions are expected to deteriorate, e.g. due to unplanned recession or progressive political change, firms can threaten capital flight, financial markets react and investor as well as consumer confidence shrink51,58,60. Secondly, consumers usually increase their consumption in tune with increasing production60. This process can be at least in part explained by substantial advertising efforts by firms47,52,66. However, further mechanisms are at play as explained further below.

Following this analysis, it is not surprising that the growth paradigm is hegemonic, i.e. the perception that economic growth solves all kinds of societal problems, that it equals progress, power and welfare and that it can be made practically endless through some form of supposedly green or sustainable growth59. Taken together, the described dynamics create multiple dependencies of workers, firms and states on a well-functioning capital accumulation and thus wield more material, institutional and discursive power (e.g. for political lobbying) to capitalists who are usually the most affluent consumers61,67. Even if different fractions of the capitalist class have manifold and competing interests which need to be constantly renegotiated, there is a common interest in maintaining the capitalist system and favourable conditions for capital accumulation, e.g. through aggregate growth and high consumption51,62. How this political corruption by the super-affluent plays out in practice is well documented, e.g. for the meat industry in Denmark6.

Super-affluent consumers drive consumption norms

Growth imperatives and drivers (with the latter describing less coercive mechanisms to increase consumption) can also be active at the individual level. In this case, the level of consumption can serve as a proxy47,60,68. To start with, individual consumption decisions are not made in a vacuum, but are shaped by surrounding (physical and social) structures and provisioning systems47,61,69. Sanne66 and Alexander47 discuss several structural barriers to sufficiency-oriented lifestyles, locking in high consumption. These include lack of suitable housing, insufficient options for socialising, employment, transport and information, as well as high exposure to consumer temptations. Often, these conditions are deliberately fostered by states and also capitalists (the latter overlapping with super-affluent consumers and having disproportionate influence on states) to increase consumption61,66.

Further active mechanisms to spur growth include positional and efficiency consumption, which contribute to an increase in consumption overall52,60,68,70. After basic material needs are satisfied, an increasing proportion of consumption is directed at positional goods52,70. The defining feature of these goods is that they are expensive and signify social status. Access to them depends on the income relative to others. Status matters, since empirical studies show that currently relative income is one of the strongest determinants of individual happiness52. In the aggregate however, the pursuit of positional consumption, driven by super-affluent consumers and high inequalities, likely resembles a zero-sum game with respect to societal wellbeing70,71. With every actor striving to increase their position relative to their peers, the average consumption level rises and thus even more expensive positional goods become necessary, while the societal wellbeing level stagnates42,71. This is supported by a large body of empirical research, showing that an individual’s happiness correlates positively with their own income but negatively with the peer group’s income71 and that unequal access to positional goods fosters rising consumption52. This endless process is a core part of capitalism as it keeps social momentum and consumption high with affluent consumers driving aspirations and hopes of social ascent in low-affluence segments70,72. The positional consumption behaviour of the super-affluent thus drives consumption norms across the population, for instance through their excessive air travel, as documented by Gössling73.

Lastly, in capitalism, workers must compete against each other in the labour market in order to earn a living from capitalists7,63. Following Siemoneit68, this can lead to a similar imperative to net invest (increase the level of consumption/investment) as is observed with capitalists. In order to stay competitive, individuals are pushed to increase time and cost efficiency by investing in cars, kitchen appliances, computers and smartphones, by using social media and online trade etc. This efficiency consumption—effectively another facet of the rebound effect38,47,68—helps to manage high workloads, thus securing an income, while maintaining private life. This is often accompanied by trends of commodification61, understood as the marketisation of products and services which used to be provisioned through more time-intensive commons or reciprocal social arrangements, e.g. convenience food vs. cooking together. As in the food example74, this replacement of human labour with energy- and material-intensive industrial production typically increases environmental pressures47,75. Through these economic pressures, positive feedback loops and lock-ins are expected to emerge, since other consumers need to keep up with these investments or face disadvantages, e.g. when car or smartphone ownership become presupposed. Taken together with positional consumption, structural barriers to sufficiency and the substantial advertising efforts by capitalists, these mechanisms explain to a large extent why consumers seem so willing to increase their consumption in accordance with increasing production60.

#### The active reading of capitalism as the focus for alternative economic organizing essentializes systems and reflects the drive to reproduce capital---that generates resistance that merely reifies domination.

Tuomo Alhojärvi 20, MSc, Human Geography, University of Oulu, "Critical Gibson-Graham: Reading Capitalocentrism for Trouble," Rethinking Marxism, Vol. 32, Issue 3, 07/27/2020, T&F. error and language edited.

The Problem of Capitalocentrism

“Capitalocentrism” was first introduced by Gibson-Graham (1995) in a discussion of unfixing the identity of capitalism as a totality. 1 They noted the organization of capitalist and non-capitalist economies into a “binary structure,” a structure “in which one term has positive being and the other (whose exclusion participates in defining the former) is represented as negativity or lack” (277). Within this binary, non-capitalist economies are—insofar as their existence is accepted—subordinated to capitalist ones. For instance, household economies, socialisms, and local and regional economies are depicted as lacking characteristics of capitalism (namely, its efficiency and rationality, its productivity, and its global extensiveness, respectively). “Thus, despite their ostensible variety, non-capitalist forms of economy often present themselves as a homogeneous insufficiency rather than as positive and differentiated others” (278). Gibson-Graham went on to draw an analogy to Elizabeth Grosz’s feminist theorization of “phallocentrism,” suggesting that “much economic discourse is ‘capitalocentric,’ to the extent that other forms of economy are seen as the same as (or modeled upon) capitalism; as the opposite to capitalism; as the complement to capitalism; or as existing in capitalism’s sphere or orbit” (278n6).

Gibson-Graham thus introduced capitalocentrism as a binary structure that organizes economic life by privileging capitalist sites and practices while subordinating others. At stake is a specific, recurring, and often implicit relation to economic difference: “Capitalocentric discourse condenses economic difference, fusing the variety of non-capitalist economic activities into a unity in which meaning is anchored to capitalist identity” (Gibson-Graham 2006b, 56). This entails a system of valuation that “distributes positive value to those activities associated with capitalist economic activity however defined, and assigns lesser value to all other processes of producing and distributing goods and services” (56). Thus, capitalocentrism appears as a mode, structure, or tendency of organizing economic difference in a specific way so that capitalist categories, practices, actors, and sites (e.g., wage labor, private property, capitalist enterprise, market exchange, for-profit investment) are deemed more real, central, coherent, and determining than others (e.g., household labor, family subsistence farming, slave labor, producer cooperatives, caring, regenerative finance, the black market, the commons, forced labor). Approaching these actually existing differences without presuming them to line up according to predetermined logics or overruling identities is at the heart of Gibson-Graham’s strategy of “reading for difference rather than dominance” (xxxi–xxxii).

Capitalocentrism is whatever makes a differentiated reading of economy often difficult and counterintuitive: a process of placing capital(ism) and its metonymic variations “at the gravitational centre of meaning making” (Gibson-Graham, Cameron, and Healy 2016, 194). While this centering might mean a homogenization of economic thought and praxis so that the economy (or reality, for that matter) becomes primarily associated with a narrow set of sites, relations, and practices, it is also a way of organizing (fostering and creating as well as restraining or smothering) and calculating economic difference in ways that benefit certain interests and possibilities, not others. Furthermore, at stake is an organization of the spatial-temporal architecture of economy in specific ways. Whatever coexists with capital(ism) is rendered inferior to and dependent on it, and whatever is differentiated from “currently prevailing” “global capitalism” is positioned through a linear teleology as the precondition/origin of capitalism or as the always fleeting and abstract promise of its supersession (see Gibson-Graham 2006a). The ultimate achievements of capitalocentrism include the strong-theoretical self-assurance that often accompanies accounts of “economic reality” (often in the singular) without there being any need to question the epistemic assumptions or performative effects of that which is taken for granted.

To Gibson-Graham (2006a), capitalocentrism is a performative process that produces ontological and epistemic—which is also to say material and political—effects. The coining of “capitalocentrism” and other anti-essentialist thinking strategies have been motivated by “socialist or other non-capitalist construction” that appears as a “ludicrous or utopian future goal” rather than a realistic activity contemporaneous with whatever is considered capitalism (263). The task is to think and practice against the continuing sidelining of non-capitalist activities and possibilities. In this sense, the notion of capitalocentrism emerges in Gibson-Graham’s repertoire as an anti-capitalist tool. It names a way of producing and organizing hierarchies between sites, agencies, abilities, and knowledges of change making so that, indeed, capital(ism)—understood as the prevalence of a narrow set of economic practices/processes—comes to be perceived as the most central. Capitalocentrism is thus the process of (re)producing the systemic coherence and inescapability that Fisher (2009) calls “capitalist realism.” Instead of treating these “reality effects” as a direct or unavoidable consequence of actually-existing capital(ism), the point is to inquire into how our always already heterogeneous and ambiguous coexistence (the diverse economy) is organized in such restrictive, alienating, and destructive ways that recognizing more-than-capitalist alterity becomes a celebrated achievement rather than the starting point of our collective negotiation (the community economy). Thus, at stake is not another compulsive proclamation that “there are alternatives!”—this we should know by now—but rather the questioning of the capitalocentrically organized framework from which both our “alternatives” and their lack seem to emerge (see White and Williams 2016).

Gibson-Graham first framed capitalocentrism as a form of discourse, but this discursivity is not understood as somehow separate from supposedly more material concerns for “reality.” As Miller (2019, 79) highlights, it is capital that needs capitalocentric acts—or capitalocentering, as he calls it—around itself in order to organize an environment supportive of its interests: “Capital, in material practice and not just in performative discourse, does actually seek to become the center, even as this aspiration never fully succeeds.” Capital(ism) needs places where its facts can survive (see Mitchell 2008), and capitalocentering is the continuous organization of political-economic ground truths. This problematic is not only restricted to speech and text, as opposed to corporeal issues: “Capitalism is not just an economic signifier that can be displaced through deconstruction and the proliferation of signs. Rather, it is where the libidinal investment is” (Gibson-Graham 2006a, xv). Capitalocentrism is thus also what undermines the desire of economies other than those centered on capitalist practices. Its phenomenological effects, in this sense, entail everything that “pushes back” against those of us who—and parts within us which—desire otherwise (Gibson-Graham 2006b; Healy 2010).

Capitalocentrism thus is a process of continuing to subordinate non-capitalist economies, both as actually existing materialities and as politically realistic opportunities that warrant attention and energy. Insofar as “capitalist realism” makes sense, this sense making is a product of performative construction. “Capitalocentrism” is a keyword for taking this construction as an object of analysis. The challenge made by Gibson-Graham (2008a) has become a jarring provocation for those engaged in critical praxis: we find ourselves within the problematic of reproducing capital(ism) because our interpretations are inescapably entangled in a performative play of reinscribing and reconstituting reality. Instead of letting the critics within and around us off the hook by describing capitalocentrism as another political-economic concept, phenomenon, or object “out there,” we find ourselves inside its space, or within a space of competing hegemonic projects, some of which are characterized by a prevalence of capitalocentering. This repositioning follows from poststructuralist theorizations of performativity, which introduce “a minimal distance between an object, such as an economy, and the ideas, theories, and words that constitute the object through description (law, social norms, and beliefs)” (Healy 2015, 122). Within capitalocentrism we find ourselves complicit insofar as “it is the way capitalism has been ‘thought’ that has made it so difficult for people to imagine its supersession” (Gibson-Graham 2006a, 4). That the critical identification and analysis of a capitalism that “seamlessly occupies the horizons of the thinkable” (Fisher 2009, 8) is performatively entangled with this object—meaning that knowledge about capitalism is haunted by the undecidability between reflecting a preexisting reality and performing it—becomes the contentious proposition.

A glance at diverse-economies research testifies to the crucial role that “capitalocentrism” plays in identifying a problem and paving the way for solutions. For example, Gibson-Graham (2004) have called attention to how capitalocentrism works within poststructuralist rethinkings of development as an unexamined centering of attention on capitalism as the economic system. An anti-capitalocentric strategy of reading for economic difference is then proposed in order to unearth non-capitalist economies and possibilities in Papua New Guinea (see also Gibson-Graham and Ruccio 2001). In Take Back the Economy (Gibson-Graham, Cameron, and Healy 2013) “capitalocentrism” is not mentioned, but the trope of an expert-controlled and self-contained “machine economy” plays a similar role as it names the alienating order that dumbs our agencies and capacities, thus calling for us to “take back the economy—any time, any place” (188). Gibson-Graham, Cameron, and Healy (2016) have examined how critical accounts regarding the commons often work within a capitalocentric framework, as exemplified by debates on “the new enclosures” (e.g., Hardt and Negri 2009), or by the reduction of the commons into a property form that thus privileges “formal and abstract legalities at the expense of actual practices of maintaining or creating commons” (Gibson-Graham, Cameron, and Healy 2016, 198). In contrast, an anti-capitalocentric strategy emerges in their work to retrace historical processes of negotiation and struggle around different atmospheric commons in order to explore the power of renarrativization and reframing for a more expansive sense of agency in the present.

“Capitalocentrism” thus has allowed Gibson-Graham to differentiate their thinking strategies from those of others: “Working against the condensations and displacements that structure the discourse of capitalocentrism, we have produced an unruly economic landscape of particular, nonequivalent meanings. Our objective has been to dis-order the capitalist economic landscape, to queer it and thereby dislocate capitalocentrism’s hegemony” (Gibson-Graham 2006b, 77). This differentiation, this judgment, has thus been a key critical notion for Gibson-Graham (2008a), even as it has motivated an outspoken denouncement of critique understood as lamentation and mastery. The coining of “capitalocentrism” has been motivated by the construction of noncapitalist economies through displacing the hegemonic and politically counterproductive view of a monolithic economic system. This is no picnic: “To achieve this I must smash Capitalism and see it in a thousand pieces. I must make its unity a fantasy, visible as a denial of diversity and change” (Gibson-Graham 2006a, 263–4). The imperative tone gives away just how invested in negation is the coining of “capitalocentrism”—and Gibson-Graham’s feminist critique of political economy more generally (see Miller 2013; Madra and Özselçuk 2015). Also, this tone may be a good indication both of how congested and [disrupting] ~~disabling~~ the affective space of theorizing capitalism (as we knew it) was at the time of the writing of The End of Capitalism and also of the energetic surge needed from Gibson-Graham (2006a, 13) to “get out of this capitalist place,” then and there. Yet this thrust to “dis-order” and “queer” a discursive hegemony should not cajole us into ignoring how their work thrives on the insights and blindnesses of critical political economy each time a specific capitalocentric situation is recognized.

# 1AR---Round 4---Harvard

## FTC DA

### Thumpers---1AR

#### ‘Dark pattern’ enforcement increased yesterday

Kristin L. Bryan 10-29, Senior Associate at Squire Patton Boggs (US) LLP, “Breaking: FTC Announces It Will Ramp up Enforcement Against “Dark Patterns” Directed at Consumers”, National Law Review, 10/29/2021, https://www.natlawreview.com/article/breaking-ftc-announces-it-will-ramp-enforcement-against-dark-patterns-directed

This month, CPW’s Kyle Fath, Kristin Bryan, Christina Lamoureux & Elizabeth Helpling explained how data privacy and cybersecurity were Federal Trade Commission (“FTC”) priorities. As they wrote, there were “three key areas of interest to consumer privacy that are now in the FTC’s spotlight, as well as their relation to state privacy legislation and their anticipated impact to civil litigation.” One area of interest they identified was deceptive and manipulative conduct on the Internet (including so-called “dark patterns”). Today, the FTC announced that it was going to ramp up enforcement against illegal dark patterns that trick consumers into subscriptions. Read on to learn more and what it means going forward.

First, some background. The term “dark patterns” collectively applies manipulative techniques that can impair consumer autonomy and create traps for online shoppers (for instance, think of multi-click unsubscription options). As CPW previously explained, “[e]arlier this year, the FTC hosted a workshop called “Bringing Dark Patterns to Light,” and sought comments from experts and the public to evaluate how dark patterns impact customers.” The genesis for this workshop was the FTC’s concern with harms caused by dark patterns, and how dark patterns may take advantage of certain groups of vulnerable consumers.

Notably, the FTC is not alone in its attention to this issue as California’s Attorney General previously announced regulations that banned dark patterns and required disclosure to consumers of the right to opt-out of the sale of personal information collected through online cookies. Dark patterns has also been targeted in civil litigation. This year, the weight-loss app Noom faced a class action alleging deceptive acts through Noom’s cancellation policy, automatic renewal schemes, and marketing to consumers.

Building off these prior developments, today, the FTC announced a new enforcement policy statement “warning companies against deploying illegal dark patterns that trick or trap consumers into subscription services.” As the FTC cautioned, “[t]he agency is ramping up its enforcement in response to a rising number of complaints about the financial harms caused by deceptive sign up tactics, including unauthorized charges or ongoing billing that is impossible cancel.”

As summarized in the FTC’s press release announcing this development, businesses going forward must follow three key requirements in this area or run the risk of an enforcement action (including potential civil penalties):

(1) Disclose clearly and conspicuously all material terms of the product or service: This includes disclosing how much a product and/or service costs, “deadlines by which the consumer must act to stop further charges, the amount and frequency of such charges, how to cancel, and information about the product or service itself that is needed to stop consumers from being deceived about the characteristics of the product or service.”

(2) Obtain the consumer’s express informed consent before charging them for a product or services: This means “obtaining the consumer’s acceptance of the negative option feature separately from other portions of the entire transaction, not including information that interferes with, detracts from, contradicts, or otherwise undermines the consumer’s ability to provide their express informed consent.”

(3) Provide easy and simple cancellation to the consumer: Marketers are also to “provide cancellation mechanisms that are at least as easy to use as the method the consumer used to buy the product or service in the first place.”

This development is likely one of only many anticipated to be rolled out in light of the FTC’s continued focus on data privacy and cybersecurity.

#### Safeguards rule thumps AND more’s coming

Lindsey O’Donnell-Welch 10-28, Executive Editor at Decipher, “FTC Beefs Up Security Mandates for Financial Sector”, Decipher, 10/28/2021, https://duo.com/decipher/ftc-beefs-up-security-requirements-for-financial-sector

The Federal Trade Commission (FTC) has announced sweeping updates to a set of existing requirements, called the Safeguards Rule, which aim to ensure that financial institutions secure consumer data.

The Safeguards Rule, established 19 years ago, mandates that financial institutions develop information security programs to better protect the collection, storage and transmission of sensitive data - including customers' bank account and social security information. Under the FTC’s modifications, announced on Wednesday, the criteria for these programs is fleshed out in more detail, and the rule now extends to non-banking financial institutions, such as mortgage brokers. An FTC spokesperson said that these changes are part of the FTC’s periodic review of its rules, in order to ensure they “keep up to date with technological and other changes in the marketplace.”

“Financial institutions and other entities that collect sensitive consumer data have a responsibility to protect it,” said Samuel Levine, director of the FTC’s Bureau of Consumer Protection, in a statement. “The updates adopted by the Commission to the Safeguards Rule detail common-sense steps that these institutions must implement to protect consumer data from cyberattacks and other threats.”

As part of the recent changes, the FTC has detailed how financial institutions can develop and implement the required information security programs, by pointing to the specific criteria that needs to be in place. As part of this criteria, for instance, organizations need to make sure they limit who can access consumer data and utilize encryption to secure the data. Another change will hold financial institutions more accountable in securing consumer data, with the FTC now requiring each organization to designate a “qualified” individual to oversee the program and give periodic reports on the program to a board of directors. Financial companies are now also required to explain their information-sharing practices - including the technical and physical safeguards used to collect, store and distribute data.

In another significant change, the Safeguards Rule will be extended to include non-banking financial institutions that are “engaged in activities that the Federal Reserve Board determines to be incidental to financial activities.” These institutions, such as mortgage brokers, motor vehicle dealers and payday lenders, are now required to create their own security programs under the new rule. At the same time, FTC has also exempted financial institutions that collect less customer data - specifically those that collect data from less than 5,000 consumers - from certain requirements, such as written risk assessments, incident response plans or the annual reporting to a board of directors.

"Financial services organizations hold valuable, monetizeable data for millions of consumers."

The FTC voted 3-2 to adopt the Safeguards Rule updates, with some commissioners expressing concerns about a lack of data demonstrating that the changes would actually translate into better protections for consumer data.

“The new prescriptive requirements could weaken data security by diverting finite resources towards a check-the-box compliance exercise and away from risk management tailored to address the unique security needs of individual financial institutions,” according to a joint statement by commissioners Noah Joshua Phillips and Christine Wilson, who opposed the updates.

Moving forward, the FTC is looking for further comments on making additional changes to the rule that would require financial institutions to report certain data breaches, and other security incidents, to the commission.

#### Prior approval rules cracked down this week

Brent Kendall 10-29, “New Policy Gives FTC Greater Control Over How Companies Do M&A”, Wall Street Journal, 10/29/2021, https://www.wsj.com/articles/new-policy-gives-ftc-greater-control-over-how-companies-do-m-a-11635499802

The Federal Trade Commission, led by new Democratic Chairwoman Lina Khan, has adopted a series of policy changes aimed at cracking down on corporate mergers, sparking deep partisan disagreement at the agency.

The latest initiative came this week when Democrats who control the five-member FTC announced a policy that would give the commission veto power over a company’s future transactions once it attempts an allegedly anticompetitive merger or acquisition.

The new prior-approval policy will be incorporated into legal settlements in which merging companies make concessions to resolve FTC concerns that their tie-up would be anticompetitive. The commission in those agreements plans to prohibit companies from making future acquisitions in the same market—and possibly other markets—without its say-so. The FTC might also seek prior-approval rights when companies drop a proposed merger after an antitrust investigation, or if the FTC wins a merger challenge in court.

Holly Vedova, tapped by Ms. Khan to lead the FTC’s bureau of competition, said in a statement the new policy restores a practice the FTC followed until the mid-1990s and “forces acquisitive firms to think twice before going on a buying binge because the FTC can simply say no.”

The policy adds a layer of enforcement beyond standard U.S. antitrust rules, which say companies doing sizable mergers must submit them for government review and can close their transaction after a waiting period, unless the FTC or Justice Department files a lawsuit and convinces a court to block the deal. The department hasn’t adopted a policy similar to the FTC’s new measure, raising questions about diverging approaches.

#### It's huge AND changes the law

Cadwalader 10-29 – Cadwalader, Wickersham & Taft LLP, “FTC Restores Prior Approval Policy For Merger Restrictions”, Mondaq, 10/29/2021, https://www.mondaq.com/unitedstates/financial-services/1125944/ftc-restores-prior-approval-policy-for-merger-restrictions

The FTC restored its past practice of requiring merging parties to obtain prior approval from the FTC "before closing any future transaction affecting each relevant market for which a violation was alleged" (emphasis in original).

In the Prior Approval Policy Statement, the FTC stated that it will include prior approval provisions in merger divestiture orders for a minimum of 10 years for each market in which alleged harm occurred. Further, in a case in which the parties abandon the transaction during litigation, the FTC stated that it will determine whether to pursue a prior approval order based on the following, non-exhaustive, list of factors:

* whether the transaction is "substantially similar" to a prior challenged transaction;
* the level of market concentration;
* the extent to which the transaction further concentrates the market;
* whether one of the parties has pre-merger market power and the second party is a "nascent or fringe competitor";
* the history of acquisitiveness of each party in the relevant market; and
* whether the transaction will enable anticompetitive market dynamics.

In addition, the FTC stated that all divestiture buyers must agree to prior approval for a minimum of 10 years for any future sale of relevant assets.

Commentary

The FTC has taken another large step in its unilateral efforts to increase the cost and burden of mergers. At least for now, the DOJ has not followed suit. The new "prior approval" requirement for future acquisitions stands the Hart-Scott-Rodino Act on its head because the policy shifts the burden of merger approval onto the merging parties instead of the government. Moreover, the policy will hit especially hard at private equity firms that plan for disposal of acquired assets within a few years' time because the new policy also disfavors divestiture buyers who dispose of acquired stock or assets in less than 10 years.

### Defense---1AR

#### Squo solves algorithmic discrimination---And no impact, because backlash will spark correction

Rainie 17 – Director of internet and technology research at Pew Research Center, quoting various leading AI experts

Lee Rainie and Janna Anderson, Theme 2: Good things lie ahead in Code-Dependent: Pros and Cons of the Algorithm Age, Pew Research Center, 2017, <https://www.pewresearch.org/internet/2017/02/08/theme-2-good-things-lie-ahead/>

Code processes will be refined and improved; ethical issues are being worked out

DAVID KARGER

David Karger, a professor of computer science at MIT, said, “Algorithms are just the latest tools to generate fear as we consider their potential misuse, like the power loom (put manual laborers out of jobs), the car (puts kids beyond the supervision of their parents), and the television (same fears as today’s internet). In all these cases there were downsides but the upsides were greater. The question of algorithmic fairness and discrimination is an important one but it is already being considered. If we want algorithms that don’t discriminate, we will be able to design algorithms that do not discriminate. Of course, there are ethical questions: If we have an algorithm that can very accurately predict whether someone will benefit from a certain expensive medical treatment, is it fair to withhold the treatment from people the algorithm thinks it won’t help? But the issue here is not with the algorithm but with our specification of our ethical principles.”

Respondents predict the development of “ethical machines” and “iteratively improved” code that will diminish the negatives.

Lee McKnight, an associate professor at Syracuse University’s School of Information Studies, wrote, “Algorithms coded in smart service systems will have many positive, life-saving and job-creating impacts in the next decade. Social machines will become much better at understanding your needs, and attempting to help you meet them. Ethical machines – such as drones – will know to sense and avoid collisions with other drones, planes, birds or people, recognize restricted air space, and respect privacy law. Algorithmically driven vehicles will similarly learn to better avoid each other. Health care smart-service systems will be driven by algorithms to recognize human and machine errors and omissions, improving care and lowering costs.”

Jon Lebkowsky, CEO of Polycot Associates, wrote, “I’m personally committed to agile process, through which code is iteratively improved based on practice and feedback. Algorithms can evolve through agile process. So while there may be negative effects from some of the high-impact algorithms we develop, my hope and expectation is that those algorithms will be refined to diminish the negative and enhance the positive impact.”

Edward Friedman, emeritus professor of technology management at the Stevens Institute of Technology, expects more algorithms will be established to evaluate algorithms, writing, “As more algorithms enter the interactive digital world, there will be an increase of Yelp-type evaluation sites that guide users in their most constructive use.”

Ed Dodds, a digital strategist, wrote, “Algorithms will force persons to be more reflective about their own personal ontologies, fixed taxonomies, etc., regarding how they organize their own digital assets or bookmark the assets of others. AI will extrapolate. Users will then be able to run thought experiments such as ‘OK, show the opposite of those assumptions’ and such in natural-language queries. A freemium model will allow whether or not inputting a user’s own preferred filters will be of enough value.”

An anonymous chief scientist observed, “Short-term, the negatives will outweigh the positives, but as we learn and go through various experiences, the balance will eventually go positive. We always need algorithms to be tweakable by humans according to context, creating an environment of IA (intelligent assistants) instead of AI (artificial intelligence).”

Another anonymous respondent agreed, writing, “Algorithms will be improved as a reactive response. So negative results of using them will be complained about loudly at first, word-workers will work on them and identify the language that is at issue, and fine-tune them. At some point it will be 50-50. New ones will always have to be fine-tuned, and it will be the complaining that helps us fine-tune them.”

‘Algorithms don’t have to be perfect; they just have to be better than people’

Some respondents who predicted a mostly positive future said algorithms are unfairly criticized, noting they outperform human capabilities, accomplish great feats and can always be improved.

## Cap K

### Sustainable---1AR

#### Yes decoupling---best and most recent studies AND leakage is wrong.

Zeke Hausfather 21, Director, Climate and Energy at The Breakthrough Institute, "Absolute Decoupling of Economic Growth and Emissions in 32 Countries," Breakthrough Institute, 04/06/2021, https://thebreakthrough.org/issues/energy/absolute-decoupling-of-economic-growth-and-emissions-in-32-countries.

The past 30 years have seen immense progress in improving the quality of life for much of humanity. Extreme poverty — the number of people living on less than $1.90 per day — has fallen by nearly two-thirds, from 1.9 billion to around 650 million. Life expectancy has risen in most of the world, along with literacy and access to education, while infant mortality has fallen. Despite perceptions to the contrary, the average person born today is likely to have access to more opportunities and have a better quality of life than at any other point in human history. Much of this increase in human wellbeing has been propelled by rapid economic growth driven largely by state-led industrial policy, particularly in poor-to-middle income countries.

However, this growth has come at a cost: between 1990 and 2019, global emissions of CO2 increased by 56%. Historically, economic growth has been closely linked to increased energy consumption — and increased CO2 emissions in particular — leading some to argue that a more prosperous world is one that necessarily has more impacts on our natural environment and climate. There is a lively academic debate about our ability to “absolutely decouple” emissions and growth — that is, the extent to which the adoption of clean energy technology can allow emissions to decline while economic growth continues.

Over the past 15 years, however, something has begun to change. Rather than a 21st century dominated by coal that energy modelers foresaw, global coal use peaked in 2013 and is now in structural decline. We have succeeded in making clean energy cheap, with solar power and battery storage costs falling 10-fold since 2009. The world produced more electricity from clean energy — solar, wind, hydro, and nuclear — than from coal over the past two years. And, according to some major oil companies, peak oil is upon us — not because we have run out of cheap oil to produce, but because demand is falling and companies expect further decline as consumers increasingly shift to electric vehicles.

The world has long been experiencing a relative decoupling between economic growth and CO2 emissions, with the emissions per unit of GDP falling for the past 60 years. This is the case even in countries like India and China that have been undergoing rapid economic growth. But relative decoupling alone is inadequate in a world where global CO2 emissions need to peak and decline in the next decade to give us any chance at limiting warming to well below 2℃, in line with Paris Agreement targets.

Thankfully, there is increasing evidence that the world is on track to absolutely decouple CO2 emissions and economic growth — with global CO2 emissions potentially having peaked in 2019 and unlikely to increase substantially in the coming decade. While an emissions peak is just the first and easiest step towards eventually reaching the net-zero emissions required to stop the world from continuing to warm, it demonstrates that linkages between emissions and economic activity are not an immutable law, but rather simply a result of our current means of energy production.

In recent years we have seen more and more examples of absolute decoupling — economic growth accompanied by falling CO2 emissions. Since 2005, 32 countries with a population of at least one million people have absolutely decoupled emissions from economic growth, both for terrestrial emissions (those within national borders) and consumption emissions (emissions embodied in the goods consumed in a country). This includes the United States, Japan, Mexico, Germany, United Kingdom, France, Spain, Poland, Romania, Netherlands, Belgium, Portugal, Sweden, Hungary, Belarus, Austria, Bulgaria, El Salvador, Singapore, Denmark, Finland, Slovakia, Norway, Ireland, New Zealand, Croatia, Jamaica, Lithuania, Slovenia, Latvia, Estonia, and Cyprus. Figure 1, below, shows the declines in territorial emissions (blue) and increases in GDP (red).

Chart, bar chart

Description automatically generated

To qualify as having experienced absolute decoupling, we require countries included in this analysis to pass four separate filters: a population of at least one million (to focus the analysis on more representative cases), declining territorial emissions over the 2005-2019 period (based on a linear regression), declining consumption emissions, and increasing real GDP (on a purchasing power parity basis, using constant 2017 international $USD). We chose not to include 2020 in this analysis because it is not particularly representative of longer-term trends, and consumption and territorial emissions estimates are not yet available for many countries.

There is a wide range of rates of economic growth between 2005-2019 among countries experiencing absolute decoupling. Somewhat counterintuitively, there is no significant relationship between the rate of economic growth and the magnitude of emissions reductions within the group. While it is unlikely that there is not at least some linkage between the two factors, there are plenty of examples of countries (e.g., Singapore, Romania, and Ireland) experiencing both extremely rapid economic growth and large reductions in CO2 emissions.

One of the primary criticisms of some prior analyses of absolute decoupling is that they ignore leakage. Specifically, the offshoring of manufacturing from high-income countries over the past three decades to countries like China has led to “illusory” drops in emissions, where the emissions associated with high-income country consumption are simply shipped overseas and no longer show up in territorial emissions accounting. There is some truth in this critique, as there was a large increase in emissions embodied in imports from developing countries between 1990 and 2005. After 2005, however, structural changes in China and a growing domestic market led to a reversal of these trends; the amount of emissions “exported” from developed countries to developing countries has actually declined over the past 15 years.

This means that, for many countries, both territorial emissions and consumption emissions (which include any emissions “exported” to other countries) have jointly declined. In fact, on average, consumption emissions have been declining slightly faster than territorial emissions since 2005 in the 32 countries we identify as experiencing absolute decoupling. Figure 2, below, shows the change in consumption emissions (teal) and GDP (red) between 2005 and 2019.

Chart, bar chart

Description automatically generated

There is a pretty wide variation in the extent to which these countries have reduced their territorial and consumption emissions since 2005. Some countries — such as the UK, Denmark, Finland, and Singapore – have seen territorial emissions fall faster than consumption emissions, while the US, Japan, Germany, and Spain (among others) have seen consumption emissions fall faster. Figure 3 shows reductions in consumption and territorial emissions for each country, with the size of the dot representing the size of the population in 2019.

[Chart omitted]

Absolute decoupling is possible. There is no physical law requiring economic growth — and broader increases in human wellbeing — to necessarily be linked to CO2 emissions. All of the services that we rely on today that emit fossil fuels — electricity, transportation, heating, food — can in principle be replaced by near-zero carbon alternatives, though these are more mature in some sectors (electricity, transportation, buildings) than in others (industrial processes, agriculture).

### Sustainable---AT: Speculation

#### No financialization---system is resilient.

Hung Tran & Jaime Caruana 19, Nonresident senior fellow with the Atlantic Council and a former executive managing director of the Institute of International Finance; Former general manager at Bank for International Settlements, member of the board of directors at BBVA, “Diversity builds financial resilience,” Atlantic Council, 04/09/2019, <https://www.atlanticcouncil.org/blogs/new-atlanticist/diversity-builds-financial-resilience/>

The diversity of financial institutions, with their differences in business models, liability structures, time horizons, and investment motivations could contribute greatly to financial resilience. Since the 2008 crisis, financial institutional diversity has helped sustain market liquidity while banks have curtailed their market-making activity [a readiness to buy and sell securities to accommodate their clients] due to regulatory changes and business strategies. Improving resiliency and liquidity in financial markets is critical to better finance the real economy, allocate risks properly, and support financial stability.

Many financial institutions and practices, together with regulatory and accounting requirements, however, tend to exacerbate cyclical fluctuations in the economy by buying assets or extending credit in good times and cutting back in bad times. It is important, therefore, to promote financial diversity and foster counter-cyclical behaviors among institutions capable of doing so. This helps reduce the risk of market imbalances leading to liquidity crises and offset self-reinforcing dynamics in times of financial stress. This risk has become important to guard against as the International Monetary Fund’s just-released World Economic Outlook finds the global economy entering a synchronized slowing phase.

The idea is to exploit the natural differences in the balance sheet structures of financial institutions like banks and investment funds on the one hand, and insurance companies and pension funds on the other, and develop regulatory and accounting regimes that encourage diversity of behaviors.

Banks and investment funds have a positive duration gap in their balance sheets—meaning the average duration of their assets tends to be longer than that of their liabilities. Consequently, banks and investment funds tend to act in a pro-cyclical manner. When asset quality deteriorates, prices fall, and interest rates rise, the value of banks’ assets declines by more than that of their liabilities. Regulatory capital and liquidity requirements increase under those circumstances, pressuring banks to liquidate falling assets.

Investment funds can sell into falling markets to meet redemption demand, according to research by the Bank for International Settlements. Funds can also buy and sell at the same time if they use similar investment strategies, sharing economic and market views.

The pro-cyclical practices described above can be ameliorated to some extent by regulations requiring higher capital and liquidity ratios for banks as well as heightened liquidity risk management. Better capitalized banks with sufficient liquidity can arguably contribute less, but more reliable, market liquidity—compared with the very liquid pre-crisis market conditions driven by high leverage, which turned out to be illusionary. Funds can also maintain adequate cash positions to meet possible redemption demand. In any event, pro-cyclicality remains a natural tendency for those institutions and needs to be managed.

By contrast, insurance companies and pension funds have a negative duration gap in their balance sheets and, under some circumstances, could play a stabilizing role in mitigating selling pressure. As their average asset duration is much shorter than that of their liabilities, when rates rise, the value of their assets fall by less than that of their liabilities. This strengthens their solvency, allowing them to acquire assets having fallen in prices. They thus can act in a counter-cyclical manner. However, some research indicates that this counter-cyclical behavior may need to be further supported. The International Monetary Fund’s Global Financial Stability Report observed that life insurance companies—but not property and casualty insurers—and pension funds act counter-cyclically in liquidity crises, but pro-cyclically in solvency crises.

More recent empirical research, using recently available granular data on security-by-security holdings by EU institutional investors, shows that their behavior is more nuanced. Overall, insurers and pension funds behaved in a counter-cyclical manner, but the intensity of such effect has weakened since the pre-crisis period. Other preliminary research notes that the counter-cyclical behavior of insurers and pension funds can be observed for safe assets whose value can be discounted by the same risk-free rate used for liabilities. However, these institutions tend to pro-cyclically reduce holding of risk assets, including equities and corporate bonds, as their values tend to fall by more than liabilities in a market correction.

Regulators should encourage insurers and pension funds to make more use of the counter-cyclical measures provided in the EU insurance regulatory regime Solvency II—as highlighted by the European Insurance and Occupational Pension Authority. While interventions by government authorities are necessary to stabilize severe financial turmoil, more counter-cyclical behaviors by insurers and pension funds, many of which likely stay resilient in a crisis, can help reduce the frequency and severity of financial crises. Remember: during the Great Depression in the United States and its aftermath, some 7,000 banks failed but most of the insurers remained financially healthy.

### Sustainable---AT: Soil Erosion

#### No soil impact.

Dr. Hannah Ritchie 21, Senior Researcher and Head of Research at Our World In Data, PhD in GeoSciences from the University of Edinburgh, “Do We Only Have 60 Harvests Left?”, Our World in Data, 1/14/2021, https://ourworldindata.org/soil-lifespans

The stark claim that the world has only 100; 60 or even 30 years of harvests left often hits the headlines. Although they continue to be repeated, there is no scientific basis to them. While the claims are overblown, soil erosion is an important problem. Erosion rates from across the world span five orders of magnitude. Some are eroding quickly: 16% of soils are estimated to have a lifespan of less than 100 years. Others are eroding slowly: half have a lifespan greater than 1000 years; and one-third have over 5000 years. To protect our soils we must adopt better agricultural practices – such as cover cropping, minimal or no tillage, and contour cultivation. This way we can extend the lifespan of the soils that we all depend on.

Soil lifespans

If one reads the newspaper headlines on the state of the world’s soils it is easy to be convinced that we are only decades away from global famine:

“The world’s top soil could be gone within 60 years” says a senior UN official;

“Britain has only 100 harvests left” writes the Independent newspaper;

“UK is 30 to 40 years away from the ‘eradication of soil fertility’ warns Gove” [the former Environment Secretary].

The good news is that these claims are overblown. The bad news is that this doesn’t stop them being repeated over and over. The “60 harvests left” statistic seems to be one that just won’t die.

And while the headlines are exaggerations it shouldn’t take away from the fact that many of our soils are degrading and we need to take action to restore them.

Where do these claims come from?

The honest answer is that we don’t know. Botanist and science communicator, James Wong, tried to trace these claims back to their roots for an article in the New Scientist.1 We know that a senior official at a UN FAO farming conference was quoted with the “60 harvests” figure and that Michael Gove mentioned a 30 to 40 year deadline. But we don’t know what they based their assessments on.

The “100 harvests” figure seems to link back to a study in the UK conducted by researchers at the University of Sheffield.2 I say “seems to” because there appears to be no mention of the 100-year figure in the paper. James Wong failed to find where this number came from; I also spent a lot of time digging and did no better.

In any case, this study looked at the difference in soils properties of city allotments in Leicester, a city in the UK, and soils from some surrounding farms. It concluded that the soils in city allotments had more organic matter, higher nitrogen levels and a better soil density. Not exactly informative for the larger and more urgent question on the state of the world’s soils.

There is no single lifespan of the world’s soils

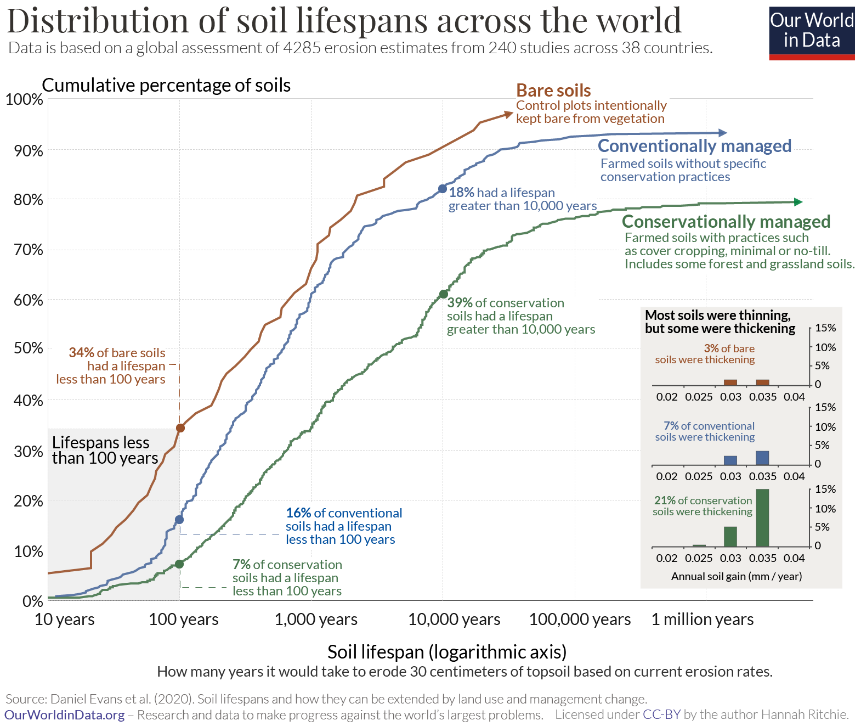
What do we know about the state of the world’s soils?

A recent study by Daniel Evans and colleagues gave us a first assessment of the range of soil lifespans across the world.3 This drew upon a database of 4285 measured soil erosion rates, from 240 studies, covering 255 unique locations across 38 countries. As shown in the map, these 255 locations span all continents of the world.

How would we estimate the ‘lifespan’ of a soil? There is no single metric to do so: soils are complex and have a range of properties from nutrient balance, to density, and structure. The best proxy – and the metric that Daniel Evans and his colleagues used – was net erosion rates of the crucial topsoil layer, the topmost layer that is around 30 centimeters thick [in reality, this thickness varies from soil to soil, but 0.3m is the most commonly adopted figure for this upper productive layer]. Crops need this layer to grow: it’s where the carbon, water and nutrients get stored.4

Depending on how the soil is managed, this topsoil can thin or thicken. If we know what rate it’s thinning, we can estimate how long it would take for this layer to disappear. For example, if a topsoil was thinning by 0.5 centimeters every year, it would take 60 years to lose 30 centimeters.5 If you want a more detailed understanding of soil lifespans and how they’re calculated, the lead author explains this here.

It’s not the only metric that determines soil productivity, but it’s a meaningful metric that tells us something valuable about the state of the world’s soils.



Number and spatial distribution of plot years for the 255 unique locations in the study.6

The lifespans of the world’s soils span five orders of magnitude

What did this study tell us about the lifespan of our soils?

Soils from the 4285 data points in the study were grouped into three categories.

‘Bare’ soils are plots of land which are deliberately kept free from any crops to determine erosion rates of soils without vegetation. These are used to assess a ‘worst-case scenario’.

Conventionally managed soils are those which are actively farmed, without implementing notable conservation practices. These are used to represent a ‘business-as-usual scenario’.

Conservation management soils were those that had been subject to soil conservation techniques such as land use change (to forests and grasslands) or improved agricultural practices such as intercropping, no-tillage, or contour farming. We will look at the impact of these techniques later.

In the chart here we see how the distribution of estimated soil lifespans in these three categories varied across the global dataset. On the x-axis we have the lifespan in years and on the y-axis we have the cumulative percentage of soils that were found to have that lifespan. Notice that the scale on the lifespan axis is logarithmic and stretches from 10 years to 10 million years. This further demonstrates how citing a single lifespan for the world’s soils is inaccurate and nonsensical.

Let’s focus on the ‘conventionally managed’ soils, shown in blue. These data are relevant for understanding many of the world’s farming practices. We will look at conservation techniques later.

Many of these soils are thinning; some very quickly. 16% have a lifespan of less than 100 years if they continue to erode at their current rates. This is not a local problem: there are examples of soils with lifespans shorter than a century on all continents, including the United States, Australia, Spain, Italy, Brazil and China. The longevity of these soils is concerning and we should be acting quickly to preserve them.

But the “60 harvests” claim is quite clearly false. More than 90% of conventionally managed soils had a ‘lifespan’ greater than 60 years. The median was 491 years for thinning soils. Half had a lifespan greater than 1,000 years, and 18% exceeded 10,000 years. There were also some soils that were not eroding at all. Where soil formation rates exceeded erosion rates, soils thickened. In fact, some were thickening – soil was forming quicker than it was eroding. In the bottom-right of the chart we see the rates of soil gain. 7% of conventionally managed soils were thickening.

If we were to keep our land completely bare – by removing any vegetation and preventing any natural regrowth through pesticides – our soils could erode more quickly. One-third (34%) of bare soils had lifespans less than 100 years.

There is no single figure for how many harvests the world has left because there is so much variation in the types, quality, and management of our soils. It’s just implausible that they would all be degrading at exactly the same rate. As these results show: some soils are eroding quickly while others are thickening.

### Transition War---1AR

#### Walt concludes war is possible

Dr. Stephen M. Walt 20, Robert and Renée Belfer Professor of International Relations at Harvard University, PhD in International Relations (with Distinction) from Stanford University, MA in Political Science from the University of California, Berkeley, “Will a Global Depression Trigger Another World War?”, Foreign Policy, 5/13/2020, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/

For these reasons, the pandemic itself may be conducive to peace. But what about the relationship between broader economic conditions and the likelihood of war? Might a few leaders still convince themselves that provoking a crisis and going to war could still advance either long-term national interests or their own political fortunes? Are the other paths by which a deep and sustained economic downturn might make serious global conflict more likely?

One familiar argument is the so-called diversionary (or “scapegoat”) theory of war. It suggests that leaders who are worried about their popularity at home will try to divert attention from their failures by provoking a crisis with a foreign power and maybe even using force against it. Drawing on this logic, some Americans now worry that President Donald Trump will decide to attack a country like Iran or Venezuela in the run-up to the presidential election and especially if he thinks he’s likely to lose.

This outcome strikes me as unlikely, even if one ignores the logical and empirical flaws in the theory itself. War is always a gamble, and should things go badly—even a little bit—it would hammer the last nail in the coffin of Trump’s declining fortunes. Moreover, none of the countries Trump might consider going after pose an imminent threat to U.S. security, and even his staunchest supporters may wonder why he is wasting time and money going after Iran or Venezuela at a moment when thousands of Americans are dying preventable deaths at home. Even a successful military action won’t put Americans back to work, create the sort of testing-and-tracing regime that competent governments around the world have been able to implement already, or hasten the development of a vaccine. The same logic is likely to guide the decisions of other world leaders too.

Another familiar folk theory is “military Keynesianism.” War generates a lot of economic demand, and it can sometimes lift depressed economies out of the doldrums and back toward prosperity and full employment. The obvious case in point here is World War II, which did help the U.S economy finally escape the quicksand of the Great Depression. Those who are convinced that great powers go to war primarily to keep Big Business (or the arms industry) happy are naturally drawn to this sort of argument, and they might worry that governments looking at bleak economic forecasts will try to restart their economies through some sort of military adventure.

I doubt it. It takes a really big war to generate a significant stimulus, and it is hard to imagine any country launching a large-scale war—with all its attendant risks—at a moment when debt levels are already soaring. More importantly, there are lots of easier and more direct ways to stimulate the economy—infrastructure spending, unemployment insurance, even “helicopter payments”—and launching a war has to be one of the least efficient methods available. The threat of war usually spooks investors too, which any politician with their eye on the stock market would be loath to do.

Economic downturns can encourage war in some special circumstances, especially when a war would enable a country facing severe hardships to capture something of immediate and significant value. Saddam Hussein’s decision to seize Kuwait in 1990 fits this model perfectly: The Iraqi economy was in terrible shape after its long war with Iran; unemployment was threatening Saddam’s domestic position; Kuwait’s vast oil riches were a considerable prize; and seizing the lightly armed emirate was exceedingly easy to do. Iraq also owed Kuwait a lot of money, and a hostile takeover by Baghdad would wipe those debts off the books overnight. In this case, Iraq’s parlous economic condition clearly made war more likely.

Yet I cannot think of any country in similar circumstances today. Now is hardly the time for Russia to try to grab more of Ukraine—if it even wanted to—or for China to make a play for Taiwan, because the costs of doing so would clearly outweigh the economic benefits. Even conquering an oil-rich country—the sort of greedy acquisitiveness that Trump occasionally hints at—doesn’t look attractive when there’s a vast glut on the market. I might be worried if some weak and defenseless country somehow came to possess the entire global stock of a successful coronavirus vaccine, but that scenario is not even remotely possible.

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

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”

Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

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

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

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

[THEIR CARD ENDS]

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

[END OF ARTICLE]

### Sustainable---AT: No Incentive

#### The AFF solves incentive.

Anne P.M. Velenturf & Phil Purnell 21, School of Civil Engineering, University of Leeds, "Principles for a Sustainable Circular Economy," Sustainable Production & Consumption, Vol. 27, July 2021, ScienceDirect.

Transforming industrial systems: Circular economy is often posited as an ideal end state which would not change anymore once it has been achieved. The reality of human society is, however, that it has always evolved and most likely will continue to do so. Hence it would be better to think about circular economy as a continuous process within which production systems, and indeed consumption systems, society and the wider context (Section 3.1.8) continue to evolve. Fig. 7 demonstrates the current evolutionary process of developing circular economy conceptions, in which the linear society was challenged and the current compromise being a recycling economy that has become the mainstream (Section 4 opening and 4.1); the sustainability of the recycling economy is challenged and the circular economy evolution must now go further towards dematerialisation (Principle 2). The change from a “recycling” to a “dematerialisation” circular economy involves a shift in design efforts from design for recycling and eco-design which aim to design out waste and limit environmental impacts (Kiser, 2016), to transform industrial systems, supply chains, and materials and products for a sustainable circular society (Section 3.1.5) capable of delivering the social and environmental net-gains while maintaining economic prosperity (i.e. in line with the value system outlined in Section 4.2). The evolutionary perspective demonstrates that implementing a circular economy is a process of continuous improvement in which the sustainability of practices is continuously monitored, evaluated and adapted (Principle 10). Adaptation involves the nurturing of innovations while unsustainable practices are phased out through “exnovation” (Fig. 7). While governments tend to show motivation for the promotion of sustainable, circular and low-carbon innovations, dealing with the other side of the coin on which we find the necessity to significantly reduce or entirely phase out fundamentally unsustainable industries (e.g. Schröder et al., 2019) proves far less popular. This is the process of creative destruction (Abernathy and Clark, 1985; Gunderson and Holling, 2002; Schumpeter, 1934) and circular economy research now has to reach out further to translate this concept into action, helping stakeholders to leave behind unsustainable practices and tap into the plentiful sustainable opportunities.