# 1NC

## Offs

### 1

#### Interp – the aff must only defend that the member nations of the World Trade Organization ought to reduce intellectual property protections for medicines.

#### Violation – they’re extra topical – they defend all forms of IP.

#### Vote neg for limits and ground: extra-topicality allows them to tack on infinite planks to artificially improve aff solvency and spike out of DAs, like fiating enforcement or other reforms. Also key to education and advocacy – they never have to test their aff against well-researched objections which o/w since it’s the only portable skill in debate. The counter-interp sets a precedent that the scope of aff fiat doesn’t have to be bounded by the resolution, which outweighs on magnitude. Limits decks competitive engagement which turns their offense because it’s key to advocacy skills and discussion about the aff.

SSD

TVA

#### Voters:

#### Education gives us portable skills for life like research and thinking.

#### The impact is fairness—a] it’s an intrinsic good – debate is fundamentally a game and some level of competitive equity is necessary to sustain the activity, b] probability – debate can’t alter subjectivity, but it can rectify skews which means the only impact to a ballot is fairness and deciding who wins, c] it internal link turns every impact – a limited topic promotes in-depth research and engagement which is necessary to access all of their education

#### Precision o/w – anything else justifies the aff arbitrarily jettisoning words in the resolution at their whim which decks negative ground and preparation because the aff is no longer bounded by the resolution.

#### Drop the debater – they have a 7-6 rebuttal advantage and the 2ar to make args I can’t respond to

#### Use competing interps – a) reasonability invites arbitrary judge intervention since we don’t know your bs meter, b) collapses to competing interps – we justify 2 brightlines under an offense defense paradigm just like 2 interps.

#### No RVIs – a) illogical – you shouldn’t win for being fair – it’s a litmus test for engaging in substance, b) norming – I can’t concede the counterinterp if I realize I’m wrong which forces me to argue for bad norms

### 2

#### The member nations of the World Trade Organization ought to abolish all intellectual property protections with the exception of intellectual property protections for medicines.

Solves the entire aff –

1. none of their cards are in the context of medicine (command f – its 2 in the cite)

2. super silly to say the entire capitalist system will NOT collapse if we don’t get rid of one industry but the rest will especially since there are tons of other things that prop up cap; private property, competitive markets, wage labor, people can buy/sell products wo ipr, can buy competitors/intimidate, etc – profit motivated companies wont j give up which proves if they cant overcome the cp the aff doesn’t solve

There is no shot that they can solve the whole system of capitlaism

a. tons of other things prop up cap including the ip rights in the. NON WTO COUNTRIes – if they’re rifght all econonmic counrties wlil j move to

#### The US is leading the biopharmaceuticals race – but China is close. Catching up would be a death sentence for US lead.

Gupta 21 [Gaurav; Physician, founder of the biotechnology investment firm Ascendant BioCapital; “As Washington Ties Pharma’s Hands, China Is Leaping Ahead,” Barrons; 6/11/21; <https://www.barrons.com/articles/as-washington-ties-pharmas-hands-china-is-leaping-ahead-51623438808>] Justin

There should be no doubt that we are living at the dawn of a golden age of biomedical innovation. The American scientific engine that produced Covid-19 vaccines in record time was fueled by a convergence of advances in genomics, biomarkers, data science, and manufacturing years in the making. The first Food and Drug Administration approvals of a host of new product formats—oligonucleotide, bispecific, oncolytic virus, CAR-T, and lentivirus/AAV—all took place within the last decade. These represent an unprecedented expansion of the armamentarium that physicians have at their disposal to treat and cure disease. In the last few years, 47% of all new medicines were invented by U.S. biopharma companies, with homegrown startups driving the majority of innovation. The bulk of the remainder were developed by foreign companies specifically for the U.S. market.

An indirect benefit of these trends is that most novel therapeutics undergo clinical development and early commercial launch here in the U.S. The rest of the world understands that the American patient has earlier and broader access to groundbreaking therapies via these mechanisms. Indeed, the past decade is filled with examples of medical “firsts” for American patients: the first cure for Hepatitis C, the first gene therapy for blindness, the first immunotherapy for cancer. Future rewards will be greater still if we preserve our current system of incentivizing and protecting innovation.

The remarkable innovation capacity of our biopharmaceutical industry ought to be a source of national pride. Yet while “Made in America” is the global standard for medicines in development today, misguided policy risks ceding our scientific prowess to other countries in the future. This is particularly true in the case of China, where biotechnology has become a strategic pillar for the health of its people and economy.

From 2016 to 2020, the market capitalization of all Chinese biopharma companies increased exponentially from $1 billion to over $200 billion. China saw over $28 billion invested in its life sciences sector in 2020, double the previous year’s amount. Returns on China’s investment are already arriving. The FDA approved a drug developed in China for the first time ever in 2019. While China’s innovation capacity currently remains behind America’s, my experiences as a biopharma professional make it clear they are doing everything they can to catch up and catch up fast.

In fact, when I speak to Chinese biotechnology executives, they boast that they can run clinical trials faster than their U.S. counterparts. The danger of misguided policies that disincentivize pharmaceutical innovation in the U.S. is effectively driving that same innovation to China. If we close off the market in the U.S. at the same time that China is opening its market to innovative new products, then we will see companies choose to first launch impactful novel medicines in China, based on clinical trials conducted in China. Because the FDA rarely accepts data generated entirely outside the U.S., this relocation of research capacity will negatively affect Americans’ access to cutting-edge therapies.

#### The plan gives away sensitive biotechnology information that facilitates a China lead.

Rogin 21 [Josh; Columnist for the Global Opinions section of the Washington Post and a political analyst with CNN. Previously, he has covered foreign policy and national security for Bloomberg View, Newsweek, the Daily Beast, Foreign Policy magazine, Congressional Quarterly, Federal Computer Week magazine and Japan’s Asahi Shimbun newspaper. He was a 2011 finalist for the Livingston Award for Young Journalists and the 2011 recipient of the Interaction Award for Excellence in International Reporting. Rogin holds a BA in international affairs from George Washington University and studied at Sophia University in Tokyo. He lives in Washington, DC; “Opinion: The wrong way to fight vaccine nationalism,” The Washington Post; 4/8/21; <https://www.washingtonpost.com/opinions/global-opinions/the-wrong-way-to-fight-vaccine-nationalism/2021/04/08/9a65e15e-98a8-11eb-962b-78c1d8228819_story.html>] Justin

Americans will not be safe from covid-19 until the entire world is safe. That basic truth shows why vaccine nationalism is not only immoral but also counterproductive. But the simplest solutions are rarely the correct ones, and some countries are using the issue to advance their own strategic interests. The Biden administration must reject the effort by some nations to turn our shared crisis into their opportunity.

As the inequities of vaccine distribution worldwide grow, a group of more than 50 developing countries led by India and South Africa is pushing the World Trade Organization to dissolve all international intellectual property protections for pandemic-related products, which would include vaccine research patents, manufacturing designs and technological know-how. The Trump administration rejected the proposal to waive the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) for the pandemic when it was introduced in October.

Now, hundreds of nongovernmental organizations and dozens of Democratic lawmakers are pushing the Biden administration to support the proposal. But many warn the move would result in the United States handing over a generation of advanced research — much of it funded by the U.S. taxpayer — to our country’s greatest competitors, above all China.

In Congress, there’s justified frustration with the United States’ failure to respond to China’s robust vaccine diplomacy, in which Beijing has conditioned vaccine offers to pandemic-stricken countries on their ignoring security concerns over Chinese telecom companies or abandoning diplomatic recognition of Taiwan. There’s also a lot of anger at Big Pharma among progressives for profiting from the pandemic.

“We are in a race against time, and unfortunately Big Pharma is standing in the way of speedily addressing this problem,” Rep. Jan Schakowsky (D-Ill.), who supports the effort to waive intellectual property protections, told me in an interview. “I think the real security issue is that while the United States balks in making sure that we help ourselves, that these adversaries will just jump right in.”

Schakowsky argued that alternative measures for helping poor countries manufacture vaccines are simply not moving fast enough to save lives and that the United States has a duty to respond. House Speaker Nancy Pelosi (D-Calif.) personally conveyed her support for the waiver to President Biden, Schakowsky said.

But Big Pharma is just one piece of the puzzle. Countries such as India and South Africa have been trying to weaken WTO intellectual property protections for decades. The mRNA technology that underpins the Pfizer and Moderna vaccines was funded initially by the Defense Advanced Research Projects Agency and has national security implications.

Inside the Biden administration, the National Security Council has already convened several meetings on the issue. The waiver is supported by many global health officials in the White House and at the U.S. Agency for International Development, who believe the United States’ international reputation is suffering from its perceived “America First” vaccine strategy.

On Wednesday, U.S. Trade Representative Katherine Tai spoke with WTO Director General Ngozi Okonjo-Iweala about the waiver issue. USTR is convening its own interagency meetings on the issue, which many see as a move to reassert its jurisdiction over WTO matters.

If and when this does get to Biden’s desk, he will also hear from national security officials who believe that waiving TRIPS would result in the forced transfer of national security-sensitive technology to China, a country that strives to dominate the biotechnology field as part of its Made in China 2025 strategy. Once countries such as China have this technology, they will apply their mercantilist industrial models to ensure their companies dominate these strategically important industries, potentially erasing thousands of U.S. jobs.

“We would be delivering a competitive advantage to countries that are increasingly viewed as our adversaries, at taxpayer expense, when there are other ways of doing this,” said Mark Cohen, senior fellow at the University of California at Berkeley Law School.

#### Gains are directly converted to military prowess – destroys US primacy.

Kuo 17 [Mercy A; Executive Vice President at Pamir Consulting; “The Great US-China Biotechnology and Artificial Intelligence Race,” The Diplomat; 8/23/17; <https://thediplomat.com/2017/08/the-great-us-china-biotechnology-and-artificial-intelligence-race/>] TDI // Re-Cut Justin

Trans-Pacific View author Mercy Kuo regularly engages subject-matter experts, policy practitioners, and strategic thinkers across the globe for their diverse insights into the U.S. Asia policy. This conversation with Eleonore Pauwels – Director of Biology Collectives and Senior Program Associate, Science and Technology Innovation Program at the Wilson Center in Washington D.C. – is the 104th in “The Trans-Pacific View Insight Series.”

Explain the motivation behind Chinese investment in U.S. genomics and artificial intelligence (AI).

With large public and private investments inland and in the U.S., China plans to become the next AI-Genomics powerhouse, which indicates that these technologies will soon converge in China.

China’s ambition is to lead the global market for precision medicine, **which necessitates acquiring strategic tech**nological and human capital in both genomics and AI. And the country excels at this game. A sharp blow in this U.S.-China competition happened in 2013 when BGI purchased Complete Genomics, in California, with the intent to build its own advanced genomic sequencing machines, therefore securing a technological knowhow mainly mastered by U.S. producers.

There are significant economic incentives behind China’s heavy investment in the increasing convergence of AI and genomics. This golden combination will drive precision medicine to new heights by developing a more sophisticated understanding of how our genomes function, leading to precise, even personalized, cancer therapeutics and preventive diagnostics, such as liquid biopsies. By one estimate, the liquid biopsy market is expected to be worth $40 billion in 2017.

Assess the implications of iCarbonX of Shenzhen’s decision to invest US$100 million in U.S.-company PatientsLikeMe relative to AI and genomic data collection.

iCarbonX is a pioneer in AI software that learns to recognize useful relationships between large amounts of individuals’ biological, medical, behavioral and psychological data. Such a data-ecosystem will deliver insights into how an individual’s genome is mutating over time, and therefore critical information about this individual’s susceptibilities to rare, chronic and mental illnesses. In 2017, iCarbonX invested $100 million in PatientsLikeMe, getting a hold over data from the biggest online network of patients with rare and chronic diseases. If successful, this effort could turn into genetic gold, making iCarbonX one of the wealthiest healthcare companies in China and beyond.

The risk factor is that iCarbonX is handling more than personal data, but potentially vulnerable data as the company uses a smartphone application, Meum, for customers to consult for health advice. Remember that the Chinese nascent genomics and AI industry relies on cloud computing for genomics data-storage and exchange, creating, in its wake, new vulnerabilities associated with any internet-based technology. This phenomenon has severe implications. How much consideration has been given to privacy and the evolving notion of personal data in this AI-powered health economy? And is our cyberinfrastructure ready to protect such trove of personal health data from hackers and industrial espionage? In this new race, will China and the U.S. have to constantly accelerate their rate of cyber and bio-innovation to be more resilient? Refining our models of genomics data protection will become a critical biosecurity issue.

Why is Chinese access to U.S. genomic data a national security concern?

**Genomics** and computing research **is inherently dual-use, therefore a strategic advantage in a nation’s security arsenal.**

Using AI systems to understand how the functioning of our genomes impacts our health **is of strategic importance for biodefense.** This knowledge will lead to increasing developments at the forefront of medical countermeasures, **including vaccines**, antibiotics, and targeted treatments relying on virus-engineering and microbiome research. Applying deep learning to genomics data-sets could help geneticists learn how to use genome-editing (CRISPR) to efficiently engineer living systems, but also to treat and, even “optimize,” human health, **with potential applications in military enhancements**. A $15 million partnership between a U.S. company, Gingko Bioworks, and DARPA aims to genetically design new probiotics as a protection for soldiers against a variety of stomach bugs and illnesses.

China could be using the same deep learning techniques on U.S. genomics data to better comprehend how to develop, patent and manufacture tailored cancer immunotherapies in high demand in the United States. Yet, what if Chinese efforts venture into understanding how to impact key genomics health determinants relevant to the U.S. population? **Gaining access to increasingly large U.S. genomic data-sets gives China a knowledge advantage into leading the next steps in bio-military research.**

Could biomedical data be used to develop bioweapons? Explain.

Personalized medicine advances mean that personalized bio-attacks are increasingly possible. The combination of AI with biomedical data and genome-editing technologies will help us predict genes most important to particular functions. Such insights will contribute to knowing how a particular disease occurs, how a newly-discovered virus has high transmissibility, but also why certain populations and individuals are more susceptible to it. Combining host susceptibility information with pathogenic targeted design, **malicious actors could engineer pathogens that are tailored to overcome the immune system or the microbiome of specific populations.**

#### That causes extinction.

Yulis 17 [Max; Major in PoliSci, Penn Political Review; “In Defense of Liberal Internationalism,” Penn Political Review; 4/8/17; <http://pennpoliticalreview.org/2017/04/in-defense-of-liberal-internationalism/>] // Re-Cut Justin

Over the past decade, international headlines have been bombarded with stories about the unraveling of the post-Cold War world order, the creation of revolutionary smart devices and military technologies, the rise of militant jihadist organizations, and nuclear proliferation. Indeed, times are paradoxically promising and alarming. In relation to treating the world’s ills, fortunately, there is a capable hegemon– one that has the ability to revive the world order and traditionally hallmarked human rights, peace, and democracy. The United States, with all of its shortcomings, had crafted an international agenda that significantly impacted the post-WWII landscape. Countries invested their ambitions into security communities, international institutions, and international law in an effort to mitigate the chances of a nuclear catastrophe or another World War. The horrors and atrocities of the two Great Wars had traumatized the global community, which spurred calls for peace and the creation of a universalist agenda. Today, the world’s fickle and declining hegemon still has the ability, but not the will, to uphold the world order that it had so carefully and eagerly helped construct. Now, the stakes are too high, and there must be a mighty and willing global leader to lead the effort of diffusing democratic ideals and reinforcing stability through both military and diplomatic means. To do this, the United States must abandon its insurgent wave of isolationism and protectionism, and come to grips with the newly transnational nature of problems ranging from climate change to international terrorism.

First, the increase in intra-state conflict should warrant concern as many countries, namely in Africa and the Middle East, are seeing the total collapse of civil society and government. These power vacuums are being filled with increasingly ideological and dangerous tribal and non-state actors, such as Boko Haram, ISIS, and Al-Shabaab. Other bloody civil wars in Rwanda, Sudan, and the Congo have contributed to the deaths of millions in the past two decades. As the West has seen, however, military intervention has not been all that successful in building and empowering democratic institutions in the Far East. A civil crusade, along with the strengthening of international institutions, may in fact be the answer to undoing tribal, religious, and sectarian divisions, thereby mitigating the prospects of civil conflict. During the Wilsonian era, missionaries did their part to internationalize the concept of higher education, which has contributed to the growth of universities in formerly underdeveloped countries such as China and South Korea.[1] In addition, the teachings of missionaries emphasized the universality of humanity and the oneness of man, which was antithetical to the justifications for imperialism and the rampant sectarianism that plagued much of the Middle East and Africa.[2] Seeing that an increase in the magnitude of human casualty is becoming more of a reality due to advancements in military technology and the increasing outbreaks of civil war, international cooperation and the diffusion of norms that highlight the importance of stable governance, democracy, and human rights is the only recourse to address the rise in sectarian divides and civil conflicts. So long as the trend of the West’s desire to look inward continues, it is likely that nation states mired in conflict will devolve into ethnic or tribal enclaves bent on relying on war to maintain their legitimacy and power. Aside from growing sectarianism and the increasing prevalence of failed states, an even more daunting threat come from weapons that transcend the costs of conventional warfare.

The problem of nuclear proliferation has been around for decades, and on the eve of President Trump’s inauguration, it appeared that Obama’s lofty goal of advocating for nonproliferation would no longer be a priority of American foreign policy.[3] In addition, now that the American president is threatening to undo much of the United States’ extensive network of alliances, formerly non-nuclear states may be forced to rearm themselves. Disarmament is central to liberal internationalism, as was apparent by the Washington Naval Treaty advocated by Wilson, and by the modern CTBT treaty. The reverse is, however, being seen in the modern era, with cries coming from Japan and South Korea to remobilize and begin their own nuclear weapon programs.[4] A world with more nuclear actors is a formula for chaos, especially if nuclear weapons become mass-produced. Non-state actors will increasingly eye these nuclear sites as was the case near a Belgian nuclear power plant just over a year ago.[5] If any government commits a serious misstep, access to nuclear weapons on the behalf of terrorist and insurgent groups will become a reality, especially if a civil war occurs. States with nuclear weapons require domestic stability and strong security, which is why states such as Israel, North Korea, and Pakistan could be in serious trouble in the event of a domestic uprising or military coup. The disarmament of all states is essential for human survival, and if it is not achieved, then a world full of nuclear weapons and an international system guided by realpolitik could give rise to nuclear warfare. In today’s world, nuclear weapons leave all states virtually defenseless. But, for nuclear deproliferation to become a cornerstone of the global agenda, a pacifying and democratic power must rise to the limelight to advocate the virtues of peace, stability, and human rights.

ows on tf – capitalism collapse across the globe as companies fade takes a really long time / not an immate process

## Case

### NC - Toplevel

#### Framework – the role of the ballot is to determine whether the plan is a good idea through evaluation of consequences.

Christopher A. Bracey 6, Associate Professor of Law, Associate Professor of African & African American Studies, Washington University in St. Louis, September, Southern California Law Review, 79 S. Cal. L. Rev. 1231, p. 1318

Second, reducing conversation on race matters to an ideological contest allows opponents to elide inquiry into whether the results of a particular preference policy are desirable. Policy positions masquerading as principled ideological stances create the impression that a racial policy is not simply a choice among available alternatives, but the embodiment of some higher moral principle. Thus, the "principle" becomes an end in itself, without reference to outcomes. Consider the prevailing view of colorblindness in constitutional discourse. Colorblindness has come to be understood as the embodiment of what is morally just, independent of its actual effect upon the lives of racial minorities. This explains Justice Thomas's belief in the "moral and constitutional equivalence" between Jim Crow laws and race preferences, and his tragic assertion that "Government cannot make us equal [but] can only recognize, respect, and protect us as equal before the law." [281](http://web.lexis-nexis.com/universe/document?_m=cd9713b340d60abd42c2b34c36d8ef95&_docnum=9&wchp=dGLbVzz-zSkVA&_md5=9645fa92f5740655bdc1c9ae7c82b328) For Thomas, there is no meaningful difference between laws designed to entrench racial subordination and those designed to alleviate conditions of oppression. Critics may point out that colorblindness in practice has the effect of entrenching existing racial disparities in health, wealth, and society. But in framing the debate in purely ideological terms, opponents are able to avoid the contentious issue of outcomes and make viability determinations based exclusively on whether racially progressive measures exude fidelity to the ideological principle of colorblindness. Meaningful policy debate is replaced by ideological exchange, which further exacerbates hostilities and deepens the cycle of resentment.

#### 1] Don’t let them weigh the sum total of their impact—they only get to weigh the unique amount solved by the affirmative. Filter the debate through scope of solvency—there’s no impact to root cause if they don’t solve it

#### 2] No performative or methodological offense, only offense from the plan—reject it cuz it explodes predictable limits, spiking out of neg ground making any discussion qualitatively worse

#### 3] Our impacts matter

#### A] Existential threats outweigh – all life has infinite value and extinction eliminates the possibility for future generations – err negative, because of innate cognitive biases

GPP 17 (Global Priorities Project, Future of Humanity Institute at the University of Oxford, Ministry for Foreign Affairs of Finland, “Existential Risk: Diplomacy and Governance,” Global Priorities Project, 2017, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>,

1.2. THE ETHICS OF EXISTENTIAL RISK In his book Reasons and Persons, Oxford philosopher Derek Parfit advanced an influential argument about the importance of avoiding extinction: I believe that if we destroy mankind, as we now can, this outcome will be much worse than most people think. Compare three outcomes: (1) Peace. (2) A nuclear war that kills 99% of the world’s existing population. (3) A nuclear war that kills 100%. (2) would be worse than (1), and (3) would be worse than (2). Which is the greater of these two differences? Most people believe that the greater difference is between (1) and (2). I believe that the difference between (2) and (3) is very much greater. ... The Earth will remain habitable for at least another billion years. Civilization began only a few thousand years ago. If we do not destroy mankind, these few thousand years may be only a tiny fraction of the whole of civilized human history. The difference between (2) and (3) may thus be the difference between this tiny fraction and all of the rest of this history. If we compare this possible history to a day, what has occurred so far is only a fraction of a second.65 In this argument, it seems that Parfit is assuming that the survivors of a nuclear war that kills 99% of the population would eventually be able to recover civilisation without long-term effect. As we have seen, this may not be a safe assumption – but for the purposes of this thought experiment, the point stands. What makes existential catastrophes especially bad is that they would “destroy the future,” as another Oxford philosopher, Nick Bostrom, puts it.66 This future could potentially be extremely long and full of flourishing, and would therefore have extremely large value. In standard risk analysis, when working out how to respond to risk, we work out the expected value of risk reduction, by weighing the probability that an action will prevent an adverse event against the severity of the event. Because the value of preventing existential catastrophe is so vast, even a tiny probability of prevention has huge expected value.67 Of course, there is persisting reasonable disagreement about ethics and there are a number of ways one might resist this conclusion.68 Therefore, it would be unjustified to be overconfident in Parfit and Bostrom’s argument. In some areas, government policy does give significant weight to future generations. For example, in assessing the risks of nuclear waste storage, governments have considered timeframes of thousands, hundreds of thousands, and even a million years.69 Justifications for this policy usually appeal to principles of intergenerational equity according to which future generations ought to get as much protection as current generations.70 Similarly, widely accepted norms of sustainable development require development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.71 However, when it comes to existential risk, it would seem that we fail to live up to principles of intergenerational equity. Existential catastrophe would not only give future generations less than the current generations; it would give them nothing. Indeed, reducing existential risk plausibly has a quite low cost for us in comparison with the huge expected value it has for future generations. In spite of this, relatively little is done to reduce existential risk. Unless we give up on norms of intergenerational equity, they give us a strong case for significantly increasing our efforts to reduce existential risks. 1.3. WHY EXISTENTIAL RISKS MAY BE SYSTEMATICALLY UNDERINVESTED IN, AND THE ROLE OF THE INTERNATIONAL COMMUNITY In spite of the importance of existential risk reduction, it probably receives less attention than is warranted. As a result, concerted international cooperation is required if we are to receive adequate protection from existential risks. 1.3.1. Why existential risks are likely to be underinvested in There are several reasons why existential risk reduction is likely to be underinvested in. Firstly, it is a global public good. Economic theory predicts that such goods tend to be underprovided. The benefits of existential risk reduction are widely and indivisibly dispersed around the globe from the countries responsible for taking action. Consequently, a country which reduces existential risk gains only a small portion of the benefits but bears the full brunt of the costs. Countries thus have strong incentives to free ride, receiving the benefits of risk reduction without contributing. As a result, too few do what is in the common interest. Secondly, as already suggested above, existential risk reduction is an intergenerational public good: most of the benefits are enjoyed by future generations who have no say in the political process. For these goods, the problem is temporal free riding: the current generation enjoys the benefits of inaction while future generations bear the costs. Thirdly, many existential risks, such as machine superintelligence, engineered pandemics, and solar geoengineering, pose an unprecedented and uncertain future threat. Consequently, it is hard to develop a satisfactory governance regime for them: there are few existing governance instruments which can be applied to these risks, and it is unclear what shape new instruments should take. In this way, our position with regard to these emerging risks is comparable to the one we faced when nuclear weapons first became available. Cognitive biases also lead people to underestimate existential risks. Since there have not been any catastrophes of this magnitude, these risks are not salient to politicians and the public.72 This is an example of the misapplication of the availability heuristic, a mental shortcut which assumes that something is important only if it can be readily recalled. Another cognitive bias affecting perceptions of existential risk is scope neglect. In a seminal 1992 study, three groups were asked how much they would be willing to pay to save 2,000, 20,000 or 200,000 birds from drowning in uncovered oil ponds. The groups answered $80, $78, and $88, respectively.73 In this case, the size of the benefits had little effect on the scale of the preferred response. People become numbed to the effect of saving lives when the numbers get too large. 74 Scope neglect is a particularly acute problem for existential risk because the numbers at stake are so large. Due to scope neglect, decision-makers are prone to treat existential risks in a similar way to problems which are less severe by many orders of magnitude. A wide range of other cognitive biases are likely to affect the evaluation of existential risks.75

#### B] We access their role of the ballot—extinction by any process would cause massive suffering and obviously affects minorities. Proves even if they win their framing, extinction is still a tiebreaker – we’re not abstraction/inconsistent w their framing if we win our scenario

#### C] Anything other than probability \* magnitude is arbitrary and ethically irresponsible because it would justify a 100% chance of resolving a small amount of current suffering outweighs a 99% chance of preventing extinction, which is ethically disastrous and proves magnitude has to matter

#### 4] Yes 2n answers to 1ar cross apps of 1ac ev – a] clash b] neg strat

### NC – Case

#### Tech innovation undergirded by profit motives are driving the Second Machine Age, which dematerializes capitalism and makes growth a sustainable necessity

McAfee, 19—cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management, former professor at Harvard Business School and fellow at Harvard’s Berkman Center for Internet and Society (Andrew, “Looking Ahead: The World Cleanses Itself This Way,” *More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources—and What Happens Next*, Chapter 14, pg 278-292, Kindle, dml)

The decreases in resource use, pollution, and other exploitations of the earth cataloged in the preceding chapters are great news. But are they going to last? It could be that we're just living in a pleasant interlude between the Industrial Era and another rapacious period during which we massively increase our footprint on our planet and eventually cause a giant Malthusian crash.

It could be, but I don't think so. Instead, I think we're going to take better care of our planet from now on. I'm confident that the Second Machine Age will mark the time in our history when we started to progressively and permanently tread more lightly on the earth, taking less from it and generally caring for it better, even as we humans continue to become more numerous and prosperous. The work of Paul Romer, who shared the 2018 Nobel Prize in economics, is one of the sources of this confidence.

Growth Mindset

Romer's largest contribution to economics was to show that it's best not to think of new technologies as something that companies buy and bring in from the outside, but instead as something they create themselves (the title of his most famous paper, published in 1990, is "Endogenous Technological Change"). These technologies are like designs or recipes; as Romer put it, they’re "the instructions that we follow for combining raw materials." This is close to the definitions of technology presented in chapter 7.

Why do companies invent and improve technologies? Simply, to generate profits. They come up with instructions, recipes, and blueprints that will let them grow revenues or shrink costs. As we saw repeatedly in chapter 7, capitalism provides ample incentive for this kind of tech progress.

So far, all this seems like a pretty standard argument for how the first two horsemen work together. Romer's brilliance was to highlight the importance of two key attributes of the technological ideas companies come up with as they pursue profits. The first is that they're nonrival, meaning that they can be used by more than one person or company at a time, and that they don't get used up. This is obviously not the case for most resources made out of atoms—I can't also use the pound of steel that you've just incorporated into the engine of a car—but it is the case for ideas and instructions. The Pythagorean theorem, a design for a steam engine, and a recipe for delicious chocolate chip cookies aren't ever going to get "used up" no matter how much they're used.

The second important aspect of corporate technologies is that they're partially excludable. This means that companies can kind of prevent others from using them. They do this by keeping the technologies secret (such as the exact recipe for Coca-Cola), filing for patents and other intellectual-property protection, and so on. However, none of these measures is perfect (hence the words partially and kind of). Trade secrets leak. Patents expire, and even before they expire, they must describe the invention they're claiming and so let others study it.

Partial excludability is a beautiful thing. It provides strong incentives for companies to create useful, profit-enhancing new technologies that they alone can benefit from for a time, yet it also ensures that the new techs will eventually "spill over"—that with time they’ll diffuse and get adopted by more and more companies, even if that's not what their originators want.

Romer equated tech progress to the production by companies of nonrivalrous, partially excludable ideas and showed that these ideas cause an economy to grow. What's more, he also demonstrated that this idea-fueled growth doesn't have to slow down with time. It's not constrained by the size of the labor force, the amount of natural resources, or other such factors. Instead, economic growth is limited only by the idea-generating capacity of the people within a market. Romer called this capacity "human capital" and said at the end of his 1990 paper, "The most interesting positive implication of the model is that an economy with a larger total stock of human capital will experience faster growth."

This notion, which has come to be called "increasing returns to scale," is as powerful as it is counterintuitive. Most formal models of economic growth, as well as the informal mental ones most of us walk around with, feature decreasing returns—growth slows down as the overall economy gets bigger. This makes intuitive sense; it just feels like it would be easier to experience 5 percent growth in a $1 billion economy than a $1 trillion one. But Romer showed that as long as that economy continued to add to its human capital—the overall ability of its people to come up with new technologies and put them to use—it could actually grow faster even as it grew bigger. This is because the stock of useful, nonrivalrous, nonexcludable ideas would keep growing. As Romer convincingly showed, economies run and grow on ideas.

The Machinery of Prosperity

Romer's ideas should leave us optimistic about the planetary benefits of digital tools—hardware, software, and networks—for three main reasons. First, countless examples show us how good these tools are at fulfilling the central role of technology, which is to provide "instructions that we follow for combining raw materials." Since raw materials cost money, profit-maximizing companies are particularly keen to find ways to use fewer of them. So they use digital tools to come up with beer cans that use less aluminum, car engines that use less steel and less gas, mapping software that removes the need for paper atlases, and so on and so on. None of this is done solely for the good of the earth—it's done for the pursuit of profit that's at the heart of capitalism—yet it benefits the planet by, as we've seen, causing us to take less from it.

Digital tools are technologies for creating technologies, the most prolific and versatile ones we've ever come up with. They're machines for coming up with ideas. Lots of them. The same piece of computer-aided design software can be used to create a thinner aluminum can or a lighter and more fuel-efficient engine. A drone can be used to scan farmland to see if more irrigation is needed, or to substitute for a helicopter when filming a movie. A smartphone can be used to read the news, listen to music, and pay for things, all without consuming a single extra molecule.

In the Second Machine Age, the global stock of digital tools is increasing much more quickly than ever before. It's being used in countless ways by profit-hungry companies to combine raw materials in ways that use fewer of them. In advanced economies such as America's, the cumulative impact of this combination of capitalism and tech progress is clear: absolute dematerialization of the economy and society, and thus a smaller footprint on our planet.

The second way Romer's ideas about technology and growth are showing up at present is via decreased excludability. Pervasive digital tools are making it much easier for good designs and recipes to spread around the world. While this is often not what a company wants—it wants to exclude others from its great cost-saving idea— excludability is not as easy as it used to be.

This isn't because of weaker patent protection, but instead because of stronger digital tools. Once one company shows what's possible, others use hardware, software, and networks to catch up to the leader. Even if they can't copy exactly because of intellectual-property restrictions, they can use digital tools to explore other means to the same end. So, many farmers learn to get higher yields while using less water and fertilizer, even though they combine these raw materials in different ways. Steve Jobs would certainly have preferred for Apple to be the only provider of smartphones after it developed the iPhone, but he couldn't maintain the monopoly no matter how many patents and lawsuits he filed. Other companies found ways to combine processors, memory, sensors, a touch screen, and software into phones that satisfied billions of customers around the world.

The operating system that powers most non-Apple smartphones is Android, which is both free to use and freely modifiable. Google's parent company, Alphabet, developed and released Android without even trying to make it excludable; the explicit goal was to make it as widely imitable as possible. This is an example of the broad trend across digital industries of giving away valuable technologies for free.

The Linux operating system, of which Android is a descendant, is probably the best-known example of free and open-source software, but there are many others. The online software repository GitHub maintains that it's "the largest open source community in the world" and hosts millions of projects. The Arduino community does something similar for electronic hardware, and the Instructables website contains detailed instructions for making equipment ranging from air-particle counters to machine tools, all with no intellectual-property protection. Contributors to efforts such as these have a range of motivations (Alphabet's goals with Android were far from purely altruistic—among other things, the parent of Google wanted to achieve a quantum leap in mobile phone users around the world, who would avail themselves of Google Search and services such as YouTube), but they're all part of the trend of technology without excludability, which is great news for growth.

As we saw in chapter 10, smartphone use and access to the Internet are increasing quickly across the planet. This means that people no longer need to be near a decent library or school to gain knowledge and improve their abilities. Globally, people are taking advantage of the skill-building opportunities of new technologies. This is the third reason that the spread of digital tools should make us optimistic about future growth: these tools are helping human capital grow quickly.

The free Duolingo app, for example, is now the world's most popular way to learn a second language. Of the nearly 15 billion Wikipedia page views during July of 2018, half were in languages other than English. Google's chief economist, Hal Varian, points out that hundreds of millions of how-to videos are viewed every day on YouTube, saying, "We never had a technology before that could educate such a broad group of people anytime on an as-needed basis for free."

Romer's work leaves me hopeful because it shows that it's our ability to build human capital, rather than chop down forests, dig mines, or burn fossil fuels that drives growth and prosperity. His model of how economies grow also reinforces how well capitalism and tech progress work together, which is a central point of this book. The surest way to boost profits is to cut costs, and modern technologies, especially digital ones, offer unlimited ways to combine and recombine materials—to swap, slim, optimize, and evaporate—in cost-reducing ways. There's no reason to expect that the two horsemen of capitalism and tech progress will stop riding together anytime soon. Quite the contrary. Romer's insights reveal that they're likely to gallop faster and farther as economies grow.

Our Brighter, Lighter Future

The world still has billions of desperately poor people, but they won't remain that way. All available evidence strongly suggests that most will become much wealthier in the years and decades ahead. As they earn more and consume more, what will be the impact on the planet?

The history and economics of the Industrial Era lead to pessimism on this important question. Resource use increased in lockstep with economic growth throughout the two centuries between James Watt's demonstration of his steam engine and the first Earth Day. Malthus and Jevons seemed to be right, and it was just a question of when, not if, we'd run up against the hard planetary limits to growth.

But in America and other rich countries something strange, unexpected, and wonderful happened: we started getting more from less. We decoupled population and economic growth from resource consumption, pollution, and other environmental harms. Malthus's and Jevons's ideas gave way to Romer's, and the world will never be the same.

This means that instead of worrying about the world's poor becoming richer, we should instead be helping them upgrade economically as much and as quickly as possible. Not only is it the morally correct thing to do, it's also the smart move for our planet. As today’s poor countries get richer, their institutions will improve and most will eventually go through what Ricardo Hausmann calls "the capitalist makeover of production." This makeover doesn't enslave people, nor does it befoul the earth.

As today’s poor get richer, they'll consume more, but they'll also consume much differently from earlier generations. They won't read physical newspapers and magazines. They'll get a great deal of their power from renewables and (one hopes) nuclear because these energy sources will be the cheapest. They’ll live in cities, as we saw in chapter 12; in fact, they already are. They'll be less likely to own cars because a variety of transportation options will be only a few taps away. Most important, they'll come up with ideas that keep the growth going, and that benefit both humanity and the planet we live on.

Predicting exactly how technological progress will unfold is much like predicting the weather: feasible in the short term, but impossible over a longer time. Great uncertainty and complexity prevent precise forecasts about, for example, the computing devices we’ll be using thirty years from now or the dominant types of artificial intelligence in 2050 and beyond.

But even though we can't predict the weather long term, we can accurately forecast the climate. We know how much warmer and sunnier it will be on average in August than in January, for example, and we know that global average temperatures will rise as we keep adding greenhouse gases to the atmosphere. Similarly, we can predict the "climate" of future technological progress by starting from the knowledge that it will be heavily applied in the areas where it can affect capitalism the most. As we've seen over and over, tech progress supplies opportunities to trim costs (and improve performance) via dematerialization, and capitalism provides the motive to do so.

As a result, the Second Enlightenment will continue as we move deeper into the twenty-first century. I'm confident that it will accelerate as digital technologies continue to improve and multiply and global competition continues to increase. We’ll see some of the most striking examples of slim, swap, evaporate, and optimize in exactly the places where the opportunities are biggest. Here are a few broad predictions, spanning humanity's biggest industries.

Manufacturing. Complex parts will be made not by the techniques developed during the Industrial Era, but instead by three- dimensional printing. This is already the case for some rocket engines and other extremely expensive items. As 3-D printing improves and becomes cheaper, it will spread to automobile engine blocks, manifolds and other complicated arrangements of pipes, airplane struts and wings, and countless other parts. Because 3-D printing generates virtually no waste and doesn't require massive molds, it accelerates dematerialization.

We'll also be building things out of very different materials from what we're using today. We're rapidly improving our ability to use machine learning and massive amounts of computing power to screen the huge number of molecules available in the world. Well use this ability to determine which substances would be best for making flexible solar panels, more efficient batteries, and other important equipment. Our search for the right materials to use has so far been slow and laborious. That's about to change.

So is our ability to understand nature's proteins, and to generate new ones. All living things are made out of the large biomolecules known as proteins, as are wondrous materials such as spiders' silk. The cells in our bodies are assembly lines for proteins, but we currently understand little about how these assembly lines work—how they fold a two-dimensional string of amino acids into a complicated 3-D protein. But thanks to digital tools, we're learning quickly. In 2018, as part of a contest, the AlphaFold software developed by Google DeepMind correctly guessed the structure of twenty-five out of forty-three proteins it was shown; the second-place finisher guessed correctly three times. DeepMind cofounder Demis Hassabis says, "We [haven't] solved the protein-folding problem, this is just a first step... but we have a good system and we have a ton of ideas we haven't implemented yet." As these good ideas accumulate, they might well let us make spider-strength materials.

Energy. One of humanity's most urgent tasks in the twenty-first century is to reduce greenhouse gas emissions. Two ways to do this are to become more efficient in using energy and, when generating it, to shift away from carbon-emitting fossil fuels. Digital tools will help greatly with both.

Several groups have recently shown that they can combine machine learning and other techniques to increase the energy efficiency of data centers by as much as 30 percent. This large improvement matters for two reasons. First, data centers are heavy users of energy, accounting for about 1 percent of global electricity demand. So efficiencies in these facilities help. Second, and more important, these gains indicate how much the energy use of all our other complicated infrastructures— everything from electricity grids to chemical plants to steel mills—can be trimmed. All are a great deal less energy efficient than they could be. We have both ample opportunity and ample incentive now to improve them.

Both wind and solar power are becoming much cheaper, so much so that in many parts of the world they're now the most cost-effective options, even without government subsidies, for new electrical generators. These energy sources use virtually no resources once they're up and running and generate no greenhouse gases; they're among the world champions of dematerialization.

In the decades to come they might well be joined by nuclear fusion, the astonishingly powerful process that takes place inside the sun and other stars. Harnessing fusion has been tantalizingly out of reach for more than half a century—the old joke is that it's twenty years away and always will be. A big part of the problem is that it's hard to control the fusion reaction inside any human- made vessel, but massive improvements in sensors and computing power are boosting hope that fusion power might truly be only a generation away.

Transportation. Our current transportation systems are chronically inefficient. Most vehicles aren't used much of the time, and even when they’re in use, they're not nearly full. Now that we have technologies that let us know where every driver, passenger, piece of cargo, and vehicle is at all times, we can greatly increase the utilization and efficiency of every element of transportation.

Renting instead of owning transportation is a likely consequence of this shift. Instead of owning cars, which typically sit idle more than 90 percent of the time, more people will choose to access transportation as needed. We're already seeing this with car-hailing companies such as Uber and Lyft. These services are quickly spreading around the world, and expanding to cover more modes of transportation, from motorbikes to bicycles to electric scooters. They're also moving into commercial applications such as long- and short-haul trucking. As this shift continues, we’ll need fewer tons of steel, aluminum, plastic, gasoline, and other resources to move the world's people and goods around.

We might also experience less congestion and gridlock as we try to get around. Bikes and scooters take up little space compared to cars, so streets can accommodate many more of them. Technology also gives us the ability to implement many forms of "congestion pricing," which has been shown to reduce gridlock by making car access to busy streets expensive enough that people use other options. The most intriguing future transportation platform of all might be the sky. The same technologies that power today's small drones can be scaled up to build "air taxis" with as many as eight propellers and no pilot. Such contraptions sound like science fiction today, but they might be carrying us around by midcentury.

Agriculture. As we saw in chapter 5, leading farms have demonstrated an ability to increase their tonnage of output year after year while decreasing their use of inputs such as land, water, and fertilizer. This trend toward optimization will continue thanks to a set of innovations under the label precision agriculture. The precision comes from many sources, including better sensors of plant and animal health, soil quality and moisture, and so on; the ability to deliver fertilizer, pesticides, and water just where they're needed; and machinery that adapts itself to each plant or animal. All these varieties of precision will combine to allow traditional farms to generate more from less.

So will changes to the genomes of plants and animals. DNA modifications will increase disease and drought tolerance, expand where crops can be grown, and allow us to get more of what we want from each crop or herd. As we saw in chapter 9, they'll also allow us to take better care of vulnerable populations such as infants in poor countries by creating golden rice and other nutrition enhancers. We'll also be able to make much more precise and targeted genetic modifications thanks to a new crop of gene-editing tools that are large improvements over their more scattershot predecessors. Opposition to genetically modified organisms is fierce in some quarters, but isn't based on reason or science. This opposition will, one hopes, fade.

Throughout human history, just about all farming has been done in fields. For some crops, this is now changing. Agriculture has moved indoors, where parameters such as light, humidity, fertilizer, and even the composition of the atmosphere can be precisely monitored and controlled. In everything from urban buildings to shipping containers, crops are now being grown with progressively less labor and fewer material inputs. These completely contained farms will spread and help reduce the planetary footprint of our agriculture.

These examples aren't intended to be comprehensive, and I don't have precise estimates of how likely each innovation is, or when it's most likely to occur. I offer them only to indicate how broad and exciting are the possibilities offered by the two horsemen of capitalism and technological progress, and how they’ll continue to dematerialize our consumption and let us increase our prosperity while treading more lightly on our planet.

#### Growth is sustainable.

Harford, 20—economics columnist for the Financial Times, citing Diane Coyle, Bennett Professor of Public Policy at the University of Cambridge, Vaclav Smil, Distinguished Professor Emeritus in the Faculty of Environment at the University of Manitoba, Chris Goodall, English businessman, author and expert on new energy technologies, alumnus of St Dunstan's College, University of Cambridge, and Harvard Business School, and Jesse Ausubel, Director and Senior Research Associate of the Program for the Human Environment of Rockefeller University (Tim, “Two cheers for the dematerialising economy,” <https://www.ft.com/content/04858216-322e-11ea-9703-eea0cae3f0de>, dml)

If past trends continue, the world’s gross domestic product will be about twice as big by 2040 as it is today. That’s the sort of growth rate that translates to 30-fold growth over a century, or by a factor of a thousand over two centuries.

Is that miraculous, or apocalyptic? In itself, neither. GDP is a synthetic statistic, invented to help us put a measuring rod up against the ordinary business of life. It measures neither the energy and resource consumption that might worry us, nor the things that really lead to human flourishing.

That disconnection from what matters might be a problem if politicians strove to maximise GDP, but they don’t — otherwise they would have hesitated before imposing austerity in the face of a financial crisis, launching trade wars or getting Brexit done. Economic policymaking has flaws, but an obsession with GDP is not one of them.

Nevertheless the exponential expansion of GDP is indirectly important, because GDP growth is correlated with things that do matter, good and bad. Economic growth has long been associated with unsustainable activities such as carbon dioxide emissions and the consumption of metals and minerals.

But GDP growth is also correlated with the good things in life: in the short run, an economy that is creating jobs; in the long run, more important things. GDP per capita is highly correlated with indicators such as the Social Progress Index. The SPI summarises a wide range of indicators from access to food, shelter, health and education to vital freedoms of choice and from discrimination. All the leading countries in the Social Progress database are rich. All the strugglers are desperately poor.

So the prospect of a doubling of world GDP matters, not for its own sake, but for what it implies — an expansion of human flourishing, and the risk of environmental disaster.

So here’s the good news: we might be able to enjoy all the good stuff while avoiding the unsustainable environmental impact. The link between economic activity and the use of material resources is not as obvious as one might think. There are several reasons for this.

The first is that for all our seemingly insatiable desires, sometimes enough is enough. If you live in a cold house for lack of money, a pay rise lets you take off the extra cardigan and turn up the radiators. But if you win the lottery, you are not going to celebrate by roasting yourself alive.

The second is that, while free enterprise may care little for the planet, it is always on the lookout for ways to save money. As long as energy, land and materials remain costly, we’ll develop ways to use less. Aluminium beer cans weighed 85 grammes when introduced in the late 1950s. They now weigh less than 13 grammes.

The third reason is a switch to digital products — a fact highlighted back in 1997 by Diane Coyle in her book The Weightless World. The trend has only continued since then. My music collection used to require a wall full of shelves. It is now on a network drive the size of a large hardback book. My phone contains the equivalent of a rucksack full of equipment.

Dematerialisation is not automatic, of course. As Vaclav Smil calculates in his new book, Growth, US houses are more than twice as large today as in 1950. The US’s bestselling vehicle in 2018, the Ford F-150, weighs almost four times as much as 1908’s bestseller, the Model T. Let’s not even talk about the number of cars; Mr Smil reckons the global mass of automobiles sold has increased 2,500-fold over the past century.

Still, there is reason for hope. Chris Goodall’s research paper “Peak Stuff” concluded that, in the UK, “both the weight of goods entering the economy and the amounts finally ending up as waste probably began to fall from sometime between 2001 and 2003”. That figure includes the impact of imported goods.

In the US, Jesse Ausubel’s article “The Return of Nature” found falling consumption of commodities such as iron ore, aluminium, copper, steel, and paper and many others. Agricultural land has become so productive that some of it is being allowed to return to nature.

In the EU, carbon dioxide emissions fell 22 per cent between 1990 and 2017, despite the economy growing by 58 per cent. Only some of this fall is explained by the offshoring of production. (For a good summary of all this research, try Andrew McAfee’s book More From Less.)

Can we, then, relax? No. To pick a single obvious problem, global carbon dioxide emissions may be rising more slowly than GDP — but they are rising nevertheless, and they need to fall rapidly.

Yet the fact that dematerialisation is occurring is heartening. We all know what the basic policies are that would tilt the playing field in favour of smaller, lighter, lower-emission products and activities. Adopting those policies means we might actually be able to save the planet, preserve human needs, rights and freedoms — and still have plenty of fun into the bargain.

#### Critique of neoliberalism is politically useless—economic elites don’t identify with the title and dismiss social criticism as ‘economically illiterate.’

Rajesh VENUGOPAL 15, Assistant Professor in the Department of International Development at the London School of Economics [“Neoliberalism as concept,” *Economy and Society*, Vol. 44, No. 2, 2015, p. 165-187, Accessed Online through Emory Libraries]

Beyond conceptual proliferation and incoherence, there is an important third terminological feature of neoliberalism that more clearly distinguishes it from the multitude of other stressed and stretched concepts that dot the social sciences: it dares not speak its own name. While there are many who give out and are given the title of neoliberal, there are none who will embrace this moniker of power and call themselves as such. There is no contemporary body of knowledge that calls itself neoliberalism, no self-described neoliberal theorists that elaborate it, nor policy-makers or practitioners that implement it. There are no primers or advanced textbooks on the subject matter, no pedagogues, courses or students of neoliberalism, no policies or election manifestoes that promise to implement it (although there are many that promise to dismantle it). Pedantic as it may seem, this is a point that warrants repetition if only because there is a considerable body of critical literature that deploys neoliberalism under the mistaken assumption that, in doing so, it is being transported into the front-lines of hand-to-hand combat with free-market economics.

Advocates of market deregulation, private-sector-led growth or any of the various shifting components that might be part of neoliberalism do not describe themselves or their policies as such. Instead, neoliberalism is defined, conceptualized and deployed exclusively by those who stand in evident opposition to it, such that the act of using the word has the twofold effect of identifying oneself as non-neoliberal, and of passing negative moral judgment over it. Consequently, neoliberalism often features, even in sober academic tracts, in the rhetorical toolkit of caricature and dismissal, rather than of analysis and deliberation.

Boas and Gans-Morse (2009, p. 152) find that the inversion in its usage from positive to negative arose during the Pinochet regime in Chile. Until then, Latin American debates over economic policy in the 1960s and 1970s used the term largely in the positive sense, often with reference to West Germany's Wirtschaftswunder, whereas it became steadily negative in the 1980s. Importantly, neoliberalism, which was always a marginal part of the vocabulary in mainstream academic economics, even before its negative association, has since disappeared almost entirely in that arena in parallel with its growing influence and usage in the rest of the social sciences. As a result, the one-sided usage of neoliberalism extends not just to the way it is used only by self-consciously non-neoliberal critics, but also as a term used only by non-economists, and that, too, when referring to economic phenomena and economic forms of reasoning.

Indeed, the word neoliberalism is so utterly absent in modern economics that it is impossible to reconcile Ferguson's above definition of it as ‘macro-economic doctrine’ with the corpus of contemporary macro-economic theory at hand. For example, the word neoliberalism does not appear at all in any of the major macro-economic textbooks, including Mankiw's Principles of macroeconomics (2012), Blanchard's Macroeconomics (2012), Obstfeld and Rogoff's Foundations of international macroeconomics (1996), Krugman, Obstfeld and Melitz's International economics or Agénor and Montiel's Development macroeconomics (2008). Neither does it appear at all in a host of other widely read texts in the field, including Debraj Ray's Development economics (1998), Banerjee and Duflo's Poor economics (2011) or Barr's The economics of the welfare state (1993). Even the more unorthodox economists critical of market-based solutions, such as Paul Krugman or Joseph Stiglitz, find no need to use the concept. Neoliberalism is absent entirely from Krugman's End this depression now! and finds mention only once (in a footnote to the preface) in Stiglitz's The price of inequality: The avoidable causes and the invisible costs of inequality (2012).

Moreover, neoliberalism has, since 1966, only ever appeared twice in the pages of The American Economic Review, on both occasions as fleeting mentions. It has not appeared at all in The Quarterly Journal of Economics since 1960, nor in Journal of Political Economy since 1956. It has never appeared in Journal of Development Economics at all. In comparison, in 2012, it appeared in 10 papers in The Journal of Development Studies, eight papers in World Development, 17 papers in Development and Change and 10 papers in Journal of International Development. 5

What these strikingly different patterns of usage between economics and non-economics indicate is that, beyond dysfunctionality, neoliberalism signifies and reproduces the mutual incomprehensibility and the deep cognitive divide between these two domains (Jackson, 2013; Milonakis & Fine, 2013). Ha-Joon Chang notes that ‘critics of neoliberalism are routinely dismissed as “economically illiterate”’ (Chang, 2003, pp. 42–43). Indeed, for the rest of the social sciences, economics is an entirely alien discipline that is found to be intellectually vapid on the one hand, but also inscrutable and impenetrable due to the mathematical sophistication of its theory and empirics.

Neoliberalism purports to provide a lens through which this mysterious and hostile terrain can be surveyed, simplified, labelled and rendered understandable from a safe distance. Economic theory can thus be vicariously critiqued and dismissed without one having to encounter it, much less understand it. Not unsurprisingly, what emerges as a result is inadequate and often bears the character of dispatches from trench warfare, in which sketchy and vague outlines of enemy activity are reported from across a foggy and impassable no-man's land.

#### Scientific consensus proves warming is inevitable absent negative emissions technologies – only capitalism solves.

Welch 19

\*Large block of text condensed and shrunk to size 4

(Craig Welch, environment writer at National Geographic. Prior to joining National Geographic, he was the environmental reporter for The Seattle Times, where he worked for more than 14 years. A journalist for two decades, his work has appeared in Smithsonian magazine, the Washington Post, and Newsweek. He spent a year as a fellow at the Nieman Foundation for Journalism at Harvard University, and the Society of Environmental Journalists has twice named him Outstanding Beat Reporter of the Year, mostly recently in 2010. That same year, HarperCollins published his book, "Shell Games: A True Story of Cops, Con Men, and the Smuggling of America's Strangest Wildlife," a nonfiction detective story about wildlife thieves. It won the national Rachel Carson Environment Book Award in 2011 and was a finalist for the Pacific Northwest Booksellers Association award and the Washington State Book award. Welch and photographer Steve Ringman's Pulitzer Center-supported five-part series on ocean acidification "Sea Change: The Pacific's Perilous Turn" for The Seattle Times has won numerous including the Online Communication Award from the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, the Overseas Press Club Whitman Bassow Award, the ONA Online Journalism Award for Explanatory Reporting, and an Emmy Nomination for New Approaches to News & Documentary Programming, “To curb climate change, we have to suck carbon from the sky. But how?”, National Geographic, 17 January 2019, accessed: 12 March 2021, <https://www.nationalgeographic.com/environment/article/carbon-capture-trees-atmosphere-climate-change>, R.S.)

**The world must** quickly **stop burning fossil fuels. And** **that is no longer enough.**

Again and again, including in a major report published fall, the Intergovernmental Panel on Climate Change and other science bodies have reached a stark conclusion: Most paths to halting global temperature increases at 2 degrees—and every path **to** reach **1.5 degrees**—rely in some way on adopting methods of **sucking CO2 from the sky.**

It is a significant about-face. For years many scientists dismissed or downplayed the most highly engineered CO2 removal strategies. Those techniques were often lumped in with more dangerous forms of "geoengineering," such as injecting sulfates or other aerosols into the stratosphere to reflect sunlight and cool the planet. Focusing money and energy on any such technological fix seemed both risky and fraught with "moral hazard"—a distraction from the urgent need to cut emissions by slashing use of coal, oil, and gas.

But now many see "negative emissions," as CO2 removal strategies are also called, as an essential bridge to a clean-energy future.

"**CO2 removal has gone from a moral hazard to a moral imperative**," says Julio Friedmann, senior research scholar at the Center for Global Energy Policy at Columbia University.

There are several reasons for the shift. For starters, attempting to set a hard target at 1.5 or 2 degrees gives the world an emissions cap. With carbon emissions from fossil fuels estimated to have risen 2.7 percent in 2018, we're clearly not moving fast enough to reduce emissions—or even in the right direction.

"The longer we have postponed drastic reductions, the more daunting the challenge of achieving those reductions in the necessary time frame," says Erica Belmont, a University of Wyoming engineering researcher.

Even if the developed world rapidly switched to clean fuels, poorer countries would likely take longer. Emissions from some industries, such as cement and steel production, will be hard to eliminate, and alternative fuels for air travel are expected to remain expensive for quite some time.

Rapid progress

The good news is that CO2-removal technology has advanced far faster than expected in the last decade, says Stephen Pacala, a Princeton professor who oversaw a study of carbon removal strategies published this fall by the National Academies of Science.

The costs of machines that directly capture CO2 from the air **have fallen by two-thirds or more.** Meanwhile, at least **18 commercial-scale projects** around the world already capture CO2 from the smokestacks of coal or natural gas plants, storing it underground or even using it to create other products. Costs of that technology have **dropped by half in a dozen years.** While removing CO2 from smokestack gases is not the same as removing it from the ambient air—the former prevents new emissions, the latter cleans up old ones—both techniques require some means of sequestering CO2 after it’s captured. Additionally, advances in research and development from industrial carbon-capture can help **drive innovation** in efforts to pull old carbon from the atmosphere.

"Post-combustion carbon capture and direct air capture processes have significant components where know-how is transferable," says Christopher W. Jones, associate vice president for research at Georgia Institute of Technology.

Equally important, the **political will to subsidize carbon removal appears to be growing.** Even a **GOP-led Congress hostile to climate change worked** last year **with climate hawks** like Sen. Sheldon Whitehouse, D-Rhode Island, **to approve a $50-a-ton tax credit for** specific types of **CO2 removal**, including negative emissions techniques such as direct-air capture.

“We need to design and deploy technology to capture lots of carbon from our atmosphere at a pace never before seen," Sen. Whitehouse told National Geographic. "That’s why I’ve been pursuing legislation to help drive the development of that technology."

"You are a pessimist if you work on the science of climate impacts, because you see little action," Pacala says. "The people who know the most are the most freaked out. They've seen emissions go up and up andsee a train wreck coming."

But scientists studying negative emissions, Pacala continues, "have seen the most spectacular technological achievements in energy technology in the last 10 years. We've gone from having no tools to do this, to just seeing this unrelenting progress."

He and the other authors of the National Academies report concluded that a concerted multi-billion-dollar research and development push by government and the private sector might **within 10 years** produce market-ready technology that directly removes CO2 from ambient air **on a massive scale.**

But even evangelists such as Pacala and Whitehouse insist that direct air-capture technology can at most fill in the gaps in an overall effort to decarbonize the economy. It will never reach a scale that would save us from having to wean ourselves from fossil fuels—or from having to manage the land much better than we do now. First, do no harm The first step in improved land management is to halt practices that require carbon-removal in the first place, such as large-scale land clearing and burning. Halting deforestation in Indonesia and Brazil alone could reduce emissions equivalent to those produced by every car and light truck on the road in the United States. "Dealing with tropical deforestation is huge, huge, huge," says Katherine Mach, senior research scientist at the Woods Institute for the Environment at Stanford University. Retaining trees does more than just pull carbon from the atmosphere. Since the Amazon produces its own moisture, tree loss can lead to drought and fire, which could quickly destabilize and flip the forest to another type of landscape—one that would release its stored carbon. Replanting trees, on the other hand, could reduce atmospheric greenhouse gases even more. Simply restoring forests already chopped down in Brazil could draw about 1.5 billion metric tons of CO2 out of the air. While trees grow fast in the tropics, forest restoration shouldn't be limited to remote places. In fact, managing most land in the U.S. with an eye toward carbon reduction—both limiting new emissions and looking for places to pull CO2 back out of the atmosphere—could achieve the equivalent of cutting the country's emissions by 21 percent, according to a recent study in Science Advances. Managing land for carbon reduction would include restoring trees to native forests, slowing logging rotations on Southeast timberlands, and planting more trees in some 3,500 cities. But it also would mean better managing forests to reduce catastrophic wildfires, reconnecting tidal marshes cut off from the ocean, and restoring seagrasses. Cover crops would need to be added between plantings on every acre of corn, soil, wheat, rice, and cotton in the U.S. It's ambitious—and essential to at least try, says Joe Fargione, science director for The Nature Conservancy and lead author of the recent study. "The track that we're on with climate change is so dangerous that it requires an all-hands-on-deck approach," Fargione says. "This could buy us 10 years." Many—but not all—of the actions envisioned by his team would require a price on carbon to motivate landowners to change behavior. And there are potential pitfalls. Probably the most important one is that managing land for carbon reduction could conflict with managing it for food production. With global food demand set to increase substantially over the next few decades, restoring the wrong farm land back to native forest or grasslands could limit food availability and send price shocks through the system. Then there is the obvious challenge of realizing the theoretical potential of natural carbon reduction, not just in the U.S. but on a globe covered by a tremendous diversity of landscapes and governed by a mosaic of rules and owners and political situations. In Brazil, for example, the new president-elect threatens to increase deforestation, not tree-planting. The situation in the U.S. is not necessarily easier. "There are 11 million forest landowners just in the U.S," Birdsey says. "Getting 11 million families or entities to do anything—that's a big challenge. Most programs that try to get even 10 percent of potential landowners to participate fail." That's why the National Academies study is far more conservative[RK11] than the research published by Fargione’s team in Science Advances. It assumes that forests and farms worldwide could realistically pull only 2.5 gigatons of CO2 from the atmosphere a year. A massive buildout of a technique called bioenergy with carbon capture and sequestration—in which crops, wood, or waste biomass are burned for electricity or fuel, and the resulting CO2 is captured and stored—would double the amount of CO2 removed, the National Academies study says Still, that would be a real achievement. Five gigatons of CO2 amounts to about half of fossil fuel emissions in the United States, the world's second-largest polluter. Back on the farm At McCarty Family Farms the move toward a carbon-friendlier operation was a slow evolution that highlights landowners' competing motivations. The family relocated from eastern Pennsylvania to the Midwest almost 20 years ago. As its farms grew to 8,500 cows, the family began moving toward sustainability, but not for any single reason. New research confirms that cover crops soften soils and make them richer, increasing yields. That also fights wind erosion, and much of the McCartys' land abuts highways, where dust blowing from fields can cause accidents. Plus, cover crops had been standard in Pennsylvania, because they kept rains from washing nutrients from fertilized fields into Chesapeake Bay. "In western Kansas, cover crops are not common," McCarty says. "Water is scarce and a declining resource, and people historically viewed cover crops as a drain on water. Research shows it can help you capture more water, but it's hard to break old ideas." Then, about six years ago, the McCartys contracted to supply milk to Danone North America—makers of Dannon yogurt—which, as part of a broader sustainability effort, has pledged to become carbon-neutral by 2050. The McCartys also committed to produce non-genetically modified goods. That meant staying connected to their cows' food. They began planting cover crops in earnest. Danone didn't require the McCartys to adopt particular practices. "But they encourage, through a variety of means, the adoption, sharing and utilization of best practices in all aspects of our farm management," McCarty says. The arrangement gives the dairy price stability. When times are tough—especially on dairies, 90 percent of which are family-owned—that makes a world of difference. "The farm economy has been challenging for a number of years," McCarty says. "When you're fighting for sheer survival, it's difficult to think about 'value added' products." Most American farmers, he adds, are much older than he is. At 36, he’s the youngest of four McCarty boys. "The average age of the American farmer is up there, and often-times the belief in climate change and the willingness to try new practices is more common in younger generations," McCarty says. "All we have to do is start" Extending a carbon tax credit like the one Congress passed this year to farms and timber owners might make a difference "That would be incredibly helpful," McCarty says.

The value of incentives to drive innovation is no secret. That's how renewable power went from a **niche** product **to** an **energy staple in** little more than **eight years.**

"Why is wind and solar so cheap? Because **subsidies created a marketplace where capitalism could do its magic**," Pacala says. Creating a similar marketplace for negative emissions while decarbonizing the economy could **bring rapid change.**

#### Free market capitalism has drastically improved the world.

Empirical education in child mortality and increase in life expectancy, development of tech innovation in the private market k2 medical advances, food production increased with agriculture tech green revolution, also decreased armed conflicts

Feyman 14 Yevgeniy [adjunct fellow at the Manhattan Institute. He writes on health care policy, entitlement reform, and the Affordable Care Act. His research has focused on a variety of topics, including the physician shortage, the cost of health care reform, and consumer-directed health care. Feyman was previously the deputy director of health policy at the Manhattan Institute and is currently a research assistant in the department of health policy at the Harvard T.H. Chan School of Public Health] “The Golden Age Is Now” May 23, 2014. IB

In How Much Have Global Problems Cost the World? Lomborg and a group of economists conclude that, with a few exceptions, the world is richer, freer, healthier, and smarter than it’s ever been. These gains have coincided with the near-universal rejection of statism and the flourishing of capitalist principles. At a time when political figures such as New York City mayor Bill de Blasio and religious leaders such as Pope Francis frequently remind us about the evils of unfettered capitalism, this is a worthwhile message. The doubling of human life expectancy is one of the most remarkable achievements of the past century. Consider, Lomborg writes, that “the twentieth century saw life expectancy rise by about 3 months for every calendar year.” The average child in 1900 could expect to live to just 32 years old; now that same child should make it to 70

. This increase came during a century when worldwide economic output, driven by the spread of capitalism and freedom, grew by more than 4,000 percent. These gains occurred in developed and developing countries alike; among men and women; and even in a sense among children, as child mortality plummeted. Why are we living so much longer? Massive improvements in public health certainly played an important role. The World Health Organization’s global vaccination efforts essentially eradicated smallpox. But this would have been impossible without the innovative methods of vaccine preservation developed in the private sector by British scientist Leslie Collier. Oral rehydration therapies and antibiotics have also been instrumental in reducing child mortality. Simply put, technological progress is the key to these gains—and market economies have liberated, and rewarded, technological innovation. People are not just living longer, but better—sometimes with government’s help, and sometimes despite it. Even people in the developing countries of Africa and Latin America are better educated and better fed than ever before. Hundreds of thousands of children who would have died during previous eras due to malnutrition are alive today. Here, we can thank massive advancements in agricultural production unleashed by the free market. In the 1960s, privately funded agricultural researchers bred new, high-yield strains of corn, wheat, and various other crops thanks to advances in molecular genetics. Globalization helped spread these technologies to developing countries, which used them not only to feed their people, but also to become export powerhouses. This so-called “green revolution” reinforced both the educational progress (properly nourished children tend to learn more) and the life-expectancy gains (better nutrition leads to better health) of the twentieth century. These children live in a world with fewer armed conflicts, netting what the authors call a “peace dividend.” Globalization and trade liberalization have surely contributed to this more peaceful world (on aggregate). An interdependent global economy makes war costly. Of course, problems remain. As Lomborg points out, most foreign aid likely does little to boost economic welfare, yet hundreds of billions of dollars in “development assistance” continue to flow every year from developed countries to the developing world. Moreover, climate change is widely projected to intensify in the second half of the twenty-first century, and will carry with it a significant economic cost. But those familiar with the prior work of the “skeptical environmentalist” understand that ameliorating these effects over time could prove wasteful. Lomborg notes that the latest research on climate change estimates a net cost of 0.2 to 2 percent of GDP from 2055 to 2080. The same report points out that in 2030, mitigation costs may be as high as 4 percent of GDP. Perhaps directing mitigation funding to other priorities—curing AIDS for instance—would be a better use of the resources. Lomborg’s main message? Ignore those pining for the “good old days.” Thanks to the immense gains of the past century, there has never been a better time to be alive.

#### Economic decline causes nuclear war.

Tønnesson 15—Research Professor at the Peace Research Institute Oslo; Leader of East Asia Peace program, Uppsala University [Stein, “Deterrence, interdependence and Sino–US peace,” International Area Studies Review, 2015, Vol. 18, No. 3, p. 297-311]

Several recent works on China and Sino–US relations have made substantial contributions to the current understanding of how and under what circumstances a combination of nuclear deterrence and economic interdependence may reduce the risk of war between major powers. At least four conclusions can be drawn from the review above: first, those who say that interdependence may both inhibit and drive conflict are right. Interdependence raises the cost of conflict for all sides but asymmetrical or unbalanced dependencies and negative trade expectations may generate tensions leading to trade wars among interdependent states that in turn increase the risk of military conflict (Copeland, 2015: 1, 14, 437; Roach, 2014). The risk may increase if one of the interdependent countries is governed by an inward-looking socio-economic coalition (Solingen, 2015); second, the risk of war between China and the US should not just be analysed bilaterally but include their allies and partners. Third party countries could drag China or the US into confrontation; third, in this context it is of some comfort that the three main economic powers in Northeast Asia (China, Japan and South Korea) are all deeply integrated economically through production networks within a global system of trade and finance (Ravenhill, 2014; Yoshimatsu, 2014: 576); and fourth, decisions for war and peace are taken by very few people, who act on the basis of their future expectations. International relations theory must be supplemented by foreign policy analysis in order to assess the value attributed by national decision-makers to economic development and their assessments of risks and opportunities. If leaders on either side of the Atlantic begin to seriously fear or anticipate their own nation’s decline then they may blame this on external dependence, appeal to anti-foreign sentiments, contemplate the use of force to gain respect or credibility, adopt protectionist policies, and ultimately refuse to be deterred by either nuclear arms or prospects of socioeconomic calamities. Such a dangerous shift could happen abruptly, i.e

. under the instigation of actions by a third party – or against a third party.

Yet as long as there is both nuclear deterrence and interdependence, the tensions in East Asia are unlikely to escalate to war. As Chan (2013) says, all states in the region are aware that they cannot count on support from either China or the US if they make provocative moves. The greatest risk is not that a territorial dispute leads to war under present circumstances but that changes in the world economy alter those circumstances in ways that render inter-state peace more precarious. If China and the US fail to rebalance their financial and trading relations (Roach, 2014) then a trade war could result, interrupting transnational production networks, provoking social distress, and exacerbating nationalist emotions. This could have unforeseen consequences in the field of security, with nuclear deterrence remaining the only factor to protect the world from Armageddon, and unreliably so. Deterrence could lose its credibility: one of the two great powers might gamble that the other yield in a cyber-war or conventional limited war, or third party countries might engage in conflict with each other, with a view to obliging Washington or Beijing to intervene.