# 1NC

## 1

#### Interpretation: Reduce means permanent reduction – it’s distinct from “waive” or “suspend.”

**Reynolds 59** (Judge (In the Matter of Doris A. Montesani, Petitioner, v. Arthur Levitt, as Comptroller of the State of New York, et al., Respondents [NO NUMBER IN ORIGINAL] Supreme Court of New York, Appellate Division, Third Department 9 A.D.2d 51; 189 N.Y.S.2d 695; 1959 N.Y. App. Div. LEXIS 7391 August 13, 1959, lexis)

Section 83's counterpart with regard to nondisability pensioners, section 84, prescribes a reduction only if the pensioner should again take a public job. The disability pensioner is penalized if he takes any type of employment. The reason for the difference, of course, is that in one case the only reason pension benefits are available is because the pensioner is considered incapable of gainful employment, while in the other he has fully completed his "tour" and is considered as having earned his reward with almost no strings attached. It would be manifestly unfair to the ordinary retiree to accord the disability retiree the benefits of the System to which they both belong when the latter is otherwise capable of earning a living and had not fulfilled his service obligation. If it were to be held that withholdings under section 83 were payable whenever the pensioner died or stopped his other employment the whole purpose of the provision would be defeated, i.e., the System might just as well have continued payments during the other employment since it must later pay it anyway.  [\*\*\*13] The section says "reduced", does not say that monthly payments shall be temporarily suspended; it says that the pension itself shall be reduced. The plain dictionary meaning of the word is to diminish, lower or degrade. The word "reduce" seems adequately to indicate permanency.

#### Waiver is temporary.

Green 21 [Andrew Green (Devex Contributing Reporter based in Berlin, his coverage focuses primarily on health and human rights and he has previously worked as Voice of America's South Sudan bureau chief and the Center for Public Integrity's web editor). “US backs waiver for intellectual property rights for COVID-19 vaccines”. Devex. 06 May 2021. Accessed 7/31/2021. <https://www.devex.com/news/us-backs-waiver-for-intellectual-property-rights-for-covid-19-vaccines-99847> //Xu]

In a stunning reversal, U.S. President Joe Biden’s administration came out in favor of waiving intellectual property protections for COVID-19 vaccines Wednesday. The move follows months of U.S. opposition that began under former President Donald Trump to a proposal from South Africa and India to temporarily set aside intellectual property rights around products that would protect, contain, and treat COVID-19. Its supporters have argued that the proposal, first tabled at the World Trade Organization in October and now backed by more than 100 countries, is necessary to expand vaccine production and overcome global shortages.

#### Violation: the plan waives intellectual property protections “during public health emergencies”, which is a suspension – don’t let them get We Meets since their Plan defends a waiver.

#### 1 - Vote neg for limits and neg ground – re-instatement under any infinite number of conditions doubles aff ground – every plan becomes either temporary or permanent – you cherry-pick the best criteria and I must prep every aff while they avoid core topic discussions like reduction-based DAs which decks generics like Pharma Innovation and Bio-Tech.

#### 2 - TVA solves – permanently reduce COVID patents.

## 2

#### Climate patents and innovation high now and solving warming but patent waivers set a dangerous precedent for appropriations - the mere threat is sufficient is enough to kill investment.

Brand 21, Melissa. “Trips Ip Waiver Could Establish Dangerous Precedent for Climate Change and Other Biotech Sectors.” IPWatchdog.com | Patents & Patent Law, 26 May 2021, www.ipwatchdog.com/2021/05/26/trips-ip-waiver-establish-dangerous-precedent-climate-change-biotech-sectors/id=133964/. //sid

The biotech industry is making remarkable advancestowards climate change solutions, and it is precisely for this reason that it can expect to be in the crosshairs of potential IP waiver discussions. President Biden is correct to refer to climate change as an existential crisis. Yet it does not take too much effort to connect the dots between President Biden’s focus on climate change and his Administration’s recent commitment to waive global IP rights for Covid vaccines (TRIPS IP Waiver). “This is a global health crisis, and the extraordinary circumstances of the COVID-19 pandemic call for extraordinary measures.” If an IP waiver is purportedly necessary to solve the COVID-19 global health crisis (and of course [we dispute this notion](https://www.ipwatchdog.com/2021/04/19/waiving-ip-rights-during-times-of-covid-a-false-good-idea/id=132399/)), can we really feel confident that this or some future Administration will not apply the same logic to the climate crisis? And, without the confidence in the underlying IP for such solutions, what does this mean for U.S. innovation and economic growth? United States Trade Representative (USTR) [Katherine Tai](https://www.ipwatchdog.com/2021/05/05/tai-says-united-states-will-back-india-southafrica-proposal-waive-ip-rights-trips/id=133224/) was subject to questioning along this very line during a recent Senate Finance Committee hearing. And while Ambassador Tai did not affirmatively state that an IP waiver would be in the future for climate change technology, she surely did not assuage the concerns of interested parties. The United States has historically supported robust IP protection. This support is one reason the United States is the center of biotechnology innovation and leading the fight against COVID-19. However, a brief review of the domestic legislation arguably most relevant to this discussion shows just how far the international campaign against IP rights has eroded our normative position. The Clean Air Act, for example, contains a provision allowing for the mandatory licensing of patents covering certain devices for reducing air pollution. Importantly, however, the patent owner is accorded due process and the statute lays out a detailed process regulating the manner in which any such license can be issued, including findings of necessity and that no reasonable alternative method to accomplish the legislated goal exists. Also of critical importance is that the statute requires compensation to the patent holder. Similarly, the Atomic Energy Act contemplates mandatory licensing of patents covering inventions of primary importance in producing or utilizing atomic energy. This statute, too, requires due process, findings of importance to the statutory goals and compensation to the rights holder. A TRIPS IP waiver would operate outside of these types of frameworks. There would be no due process, no particularized findings, no compensationand no recourse. Indeed, the fact that the World Trade Organization (WTO) already has a process under the TRIPS agreement to address public health crises, including the compulsory licensing provisions, with necessary guardrails and compensation, makes quite clear that the waiver would operate as a free for all. Forced Tech Transfer Could Be on The Table When being questioned about the scope of a potential TRIPS IP waiver, Ambassador Tai invoked the proverb “Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.” While this answer suggests primarily that, in times of famine, the Administration would rather give away other people’s fishing rods than share its own plentiful supply of fish (here: actual COVID-19 vaccine stocks), it is apparent that in Ambassador Tai’s view waiving patent rights alone would not help lower- and middle-income countries produce their own vaccines. Rather, they would need to be taught how to make the vaccines and given the biotech industry’s manufacturing know-how, sensitive cell lines, and proprietary cell culture media in order to do so. In other words, Ambassador Tai acknowledged that the scope of the current TRIPS IP waiver discussions includes the concept of forced tech transfer. In the context of climate change, the idea would be that companies who develop successful methods for producing new seed technologies and sustainable biomass**,** reducing greenhouse gases in manufacturing and transportation, capturing and sequestering carbon in soil and products, and more, would be required to turn over their proprietaryknow-how to global competitors. While it is unclear how this concept would work in practice and under the constitutions of certain countries, the suggestion alone could be devastating to voluntary internationalcollaborations. Even if one could assume that the United States could not implement forced tech transfer on its own soil, what about the governments of our international development partners? It is not hard to understand that a U.S.-based company developing climate change technologies would be unenthusiastic about partnering with a company abroad knowing that the foreign country’s government is on track – with the assent of the U.S. government – to change its laws and seize proprietary materials and know-how that had been voluntarily transferred to the local company. Necessary Investment Could Diminish Developing climate change solutions is not an easy endeavor and bad policy positions threaten the likelihood that they will materialize. These products have long lead times from research and development to market introduction, owing not only to a high rate of failure but also rigorous regulatory oversight. Significant investment is required to sustain and drive these challenging and long-enduring endeavors. For example, synthetic biology companies critical to this area of innovation [raised over $1 billion in investment in the second quarter of 2019 alone](https://www.bio.org/sites/default/files/2021-04/Climate%20Report_FINAL.pdf). If investors cannot be confident that IP will be in place to protect important climate change technologies after their long road from bench to market, it is unlikely they will continue to investat the current and required levels**.**

#### Climate patents are critical to solving warming – only way to stimulate Renewable Energy Technology Investment.

Aberdeen 20 Arielle Aberdeen October 2020 "Patents to climate rescue: how intellectual property rights are fundamental to the development of renewable energy" <https://www.4ipcouncil.com/application/files/4516/0399/1622/Intellectual_Property_and_Renewable_Energy.pdf> (Caribbean Attorney-at-Law with extensive experience in legal research and writing.)//Elmer

**Climate change is** the **most pressing** global **challenge** and with the international commitment to reduce greenhouse gas emissions under the Paris Agreement,1 there **needs to be a global energy revolution** and transition.2 This is where **innovative technology can help** meet the challenge of reducing our dependency on finite natural capital resources. The development and deployment of innovative technology play a pivotal role in enabling us to replace fossil fuel use with more sustainable energy solutions. **Patents** have **facilitated** the **development of such innovative technologies** thus far **and** will **continue to be the catalyst for this transition**. Patents are among a group of intellectual property rights (‘IPRs’). 3 These are private and exclusive rights given for the protection of different types of intellectual creations. IPRs are the cornerstone of developed and knowledge-based economies, as they encourage innovation, drive the investment into new areas and allow for the successful commercialisation of intellectual creations. IPRs are the cornerstone of developed and knowledge-based economies. Empirical evidence has shown that a **strong IPRs** system **influences** both the **development and diffusion of technology**. Alternatively, **weak IPRs** protection has been shown to **reduce** **innovation**, **reduce investment** and prevent firms from entering certain markets.4 Once patent protection has been sought and granted, it gives a time-limited and exclusive rights to the creator of an invention. This allows the inventor or patentor the ability to restrict others from using, selling, or making the new invented product or process. Thereby allowing a timelimited monopoly on the exploitation of the invention in the geographical area where it is protected. During the patent application procedure, the patentor must make sufficient public disclosure of the invention. This will allow others to see, understand and improve upon it, thereby spurring continuous innovation. Therefore, the patent system through providing this economic incentive is a successful tool which has encouraged the development and the dissemination of technology. Patents like all IPRs are key instruments in the global innovation ecosystem.5 When developing innovative technology, patents play a role throughout the “technological life cycle”,6 as shown in Figure 1. This lifecycle involves the invention, research and development (‘R&D’), market development and commercial diffusion. Patents are most effective when sought at the R&D stage. Once a patent has been granted, it becomes an asset which can then be used to7: Gain Market Access: Patents can create market advantages; to develop and secure market position; to gain more freedom to operate within a sector and reduce risks of infringing on other patents; protect inventions from being copied, and removes delaying by innovative firms to release new or improved technology and encourage the expansion of their markets. Negotiation leverage: Patents can build a strong brand or company reputation which can enhance the company’s negotiation power and allow for the creation of equal partnerships. Funding: Patents can generate funding and revenue streams for companies. Having a strong patent portfolio especially in small businesses or start-ups can be used to leverage investor funding; while also be a source of revenue for companies through licensing fees, sales, tax incentives, collateral for loans and access to grants and subsidies. Strategic value: Patents can be used to build “synergistic partnerships”8 through which collaboration on R&D and other partnerships; be used to improve in-house R&D and build and/ or develop more products. As such, obtaining and managing patent as part of a patent and broader IPRs strategy are key tools for business success, especially within highly innovative and technology-driven industries.9 Renewable Energy: The Basics Renewable energy is derived from natural unlimited sources which produce little to no harmful greenhouse gases and other pollutants. 10 Innovative renewable energy technologies (‘RETs’) have created the ability to tap into these sources and convert them to energy which can then be stored, distributed, and consumed at a competitive cost. RETs have developed into a technology ecosystem which consists of alternative energy production, energy conservation and green transportation.11 For energy production, RETs have been developed to generate energy from six main sources. These are: Wind energy: Technology, via off-shore and/or on-shore wind turbines, harnesses the energy produced by the wind. Solar energy: Technology either through concentrated solar power (‘CSP’)and solar photovoltaic (‘PV’) harnesses the energy produced by the sun. Hydropower: Technology either through large-scale or small-scale hydropower plants, captures energy from flowing water. Bioenergy: Technology is used to convert organic material into energy either through burning to produce heat or power or through converting it to a liquid biofuel. Geothermal: Technology is used to capture the energy from the heat produced in the earth’s core. Ocean/Tidal energy: Technology is used to capture the energy produced from waves, tides, salinity gradient energy and ocean thermal energy conversion. Out of these six sources, the wind, solar and hydropower energy sectors are the biggest, the most developed and the most widely used. While geothermal and ocean energy sources are used in a more limited capacity. In particular, the RETs in ocean energy is still at its infancy and thus presents an opportunity for future innovation and commercialisation. Renewable energy is the fastest-growing energy source, with the electricity sector showing the fastest energy transition. 12 In 2016, renewable energy accounted for 12% of final global energy consumption and in 2018, a milestone was reached with renewables being used to generate 26% of global electricity. The source of this energy has been driven by renewable hydropower, as shown in Figure 2, with wind and solar energy trailing behind in energy production. However, the International Energy Agency (‘IRENA’) forecasts that Solar PV will lead RETs to increase capacity in the upcoming years. 13 This rise in renewable energy is due to the increased investment into the sector and the development, diffusion and deployment of innovative RETs. For the period between 2010 and 2019, there were 2.6 trillion US dollars invested in renewable energy. 14 The majority of which being focused on solar energy. 15 This investment has surpassed the investment made into the traditional fossil fuel energy 16 and has been heavily driven by the private sector. 17 The International Energy Agency recent report showed that its members increased the public budgets for energy technology R&D, with the biggest increase in the low-carbon sectors.18 The geographic sources of this investment shown in Figure 3, reveals that the European Union, the United States and Japan are part of the largest investors. This reflects the historic involvement these countries have had in the renewable energy arena and the development of RETs. However, there is now the emergence of China, India and Brazil as large investors in this field. This trend in investment has also coincided with the increase in patenting technology in renewable energy compared to fossil fuels.19 Reports from the World Intellectual Property Office (WIPO), have shown that there has been a **steady increase in patent filing rates in RETs since the mid-1990s**.20 This increase has occurred in the four major renewable sectors, 21 where RETs patents applications were growing steadily from 2005 until reaching a peak in 2013.22 Post-2013, there has been a slight decline in patent filings, which can indicate a maturing of sectors and deployment of technologies.23 Each renewable energy sector is at a different stage of maturity and thus there is a variation of patent ownership. The wind sector is the most mature and consequently has the highest intellectual property ownership and patent grants compared to that of the biofuel sector. 24 IRENA also provides a comprehensive and interactive database for RETs patents. As seen in Figure 4 below, they have collected patent data from the major patent filing jurisdiction25 which shows the breakdown of the patents per type. This information reveals that there is a dominance of patent filings focused on solar technology. This data corresponds to the focus of the investment in renewable energy into solar energy. Upon closer look at the data, the geographic source of these patents shows that RETs patents have been concentrated in a few developed OECD countries and China. This also corresponds to the source of investment shown in Figure 3 and reflects the historical concentration of RETs innovation within these countries. 26 The latest WIPO report for 2019, which looks at the data for PCT patent applications, shows that 76 % of all PCT patent application came from the United States, Germany, Japan, the Republic of Korea and China.27 China is the newest entry into the top ten list and has made one of the largest jumps to become one of the biggest RETs patent filers at the PCT. This geographic data is also mirrored by IRENA’s statistics, as shown in Figure 5 below. This data also reflects China’s emerging renewable dominance. China is heavily **investing in solar energy** **technology** and has filed numerous patents in this area and the underlying technologies.28 The successful flow of investment in this sector can only **occur in** the **presence of a strong IPRs system** and protection. Government policies and initiatives to improve the **patent system** can be used to promote the development of RETs and drive private capital and investment into this area.29 This direct **effect on RETs** through policies was **shown in** the United States with the ‘**Green Tech Pilot Program’**.30 This was a special accelerated patent application procedure developed by the United States Patent and Trademark Office for inventions falling under the green technology category. This program ran from 2009-2011 and led to a boost in RETs patent applications, with the office issuing 1062 RETs patents from the programme. Other jurisdictions, such as the European Union and China have used policy and incentives to promote the development of RETs and the advancement of their renewable energy sector. In particular, the European Union and China began the renewable energy path at different starting points but are now both dominant players in this area.

#### Warming causes extinction – tipping points and positive feedback loops ensures.

Ng 19 [Yew-Kwang Ng; May 2019; Professor of Economics at Nanyang Technology University, Fellow of the Academy of Social Sciences in Australia and Member of the Advisory Board at the Global Priorities Institute at Oxford University, Ph.D. in Economics from Sydney University; Global Policy, “Keynote: Global Extinction and Animal Welfare: Two Priorities for Effective Altruism,” vol. 10, no. 2, p. 258-266; RP]

Catastrophic climate change Though by no means certain, CCC causing global extinction is possible due to interrelated factors of non‐linearity, cascading effects, positive feedbacks, multiplicative factors, critical thresholds and tipping points (e.g. Barnosky and Hadly, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0005); Belaia et al., [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0008); Buldyrev et al., [2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0016); Grainger, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0027); Hansen and Sato, [2012](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0029); IPCC [2014](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0031); Kareiva and Carranza, [2018](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0033); Osmond and Klausmeier, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0056); Rothman, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0066); Schuur et al., [2015](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0069); Sims and Finnoff, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0072); Van Aalst, [2006](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0079)).[7](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-note-1009_67) A possibly imminent tipping point could be in the form of ‘an abrupt ice sheet collapse [that] could cause a rapid sea level rise’ (Baum et al., [2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0006), p. 399). There are many avenues for positive feedback in global warming, including:

* the replacement of an ice sea by a liquid ocean surface from melting reduces the reflection and increases the absorption of sunlight, leading to faster warming;
* the drying of forests from warming increases forest fires and the release of more carbon; and
* higher ocean temperatures may lead to the release of methane trapped under the ocean floor, producing runaway global warming.

Though there are also avenues for negative feedback, the scientific consensus is for an overall net positive feedback (Roe and Baker, [2007](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0065)). Thus, the Global Challenges Foundation ([2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0026), p. 25) concludes, ‘The world is currently completely unprepared to envisage, and even less deal with, the consequences of CCC’. The threat of sea‐level rising from global warming is well known, but there are also other likely and more imminent threats to the survivability of mankind and other living things. For example, Sherwood and Huber ([2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0071)) emphasize the adaptability limit to climate change due to heat stress from high environmental wet‐bulb temperature. They show that ‘even modest global warming could … expose large fractions of the [world] population to unprecedented heat stress’ p. 9552 and that with substantial global warming, ‘the area of land rendered uninhabitable by heat stress would dwarf that affected by rising sea level’ p. 9555, making extinction much more likely and the relatively moderate damages estimated by most integrated assessment models unreliably low. While imminent extinction is very unlikely and may not come for a long time even under business as usual, the main point is that we cannot rule it out. Annan and Hargreaves ([2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0004), pp. 434–435) may be right that there is ‘an upper 95 per cent probability limit for S [temperature increase] … to lie close to 4°C, and certainly well below 6°C’. However, probabilities of 5 per cent, 0.5 per cent, 0.05 per cent or even 0.005 per cent of excessive warming and the resulting extinction probabilities cannot be ruled out and are unacceptable. Even if there is only a 1 per cent probability that there is a time bomb in the airplane, you probably want to change your flight. Extinction of the whole world is more important to avoid by literally a trillion times.

## 3

#### CP Text: The member nations of the World Trade Organization except for the People’s Republic of China ought to reduce intellectual property protections for medicines deemed essential during public health emergencies of international concern.

#### China is geared up to become biotech lead.

CAS 21 [(CAS, a division of the American Chemical Society, partners with R&D organizations globally to provide actionable scientific insights that help them plan, innovate, protect their innovations, and predict how new markets and opportunities will evolve. Leverage our unparalleled content, specialized technology, and unmatched human expertise to customize solutions that will give your organization an information advantage.), “3 reasons biotech is booming in China: How can you capitalize on the growth?”, <https://www.cas.org/resources/blog/3-reasons-biotech-booming-china-how-can-you-capitalize-growth>, July 20, 2021] TDI

3 reasons biotech is booming in China: How can you capitalize on the growth? This year marks the 40th anniversary of China's Reform and Opening Up policy, which was established in 1978. China’s embrace of economic reform and free-market principles has propelled unprecedented business and industry growth since that time, firmly securing its position as the world's second largest economy. In light of the rise of China's economy, a number of global biotech companies—such as Denmark's Novo Nordisk—began to build an early presence there. Building on this foundation, within the past few years biotech has started to grow at an explosive rate in China. In fact, China's biotech industry is anticipated to exceed four percent of GDP by 2020. Why is biotech betting big on China? Here, we explore three factors driving the country's recent biotech boom and what it means for those looking to capitalize on this growth National innovation strategy attracting top talent Ten years ago, a biotech specialist from China may have needed to look for international career opportunities. But today, thriving government programs and a surge of entrepreneurial investments have created more incentive than ever for top talent to establish careers in China. The Chinese government has made it a priority to transform the country from a manufacturing to an innovation-driven economy by developing five-year national strategic plans that set economic and growth goals. The most recent plan, which put special focus on the biotech industry, outlines the development of 10 to 20 biomedicine life-science parks with an output surpassing $1.5 billion by 2020. This is in addition to the 100 life-science parks already established throughout the country, as well as $100 billion of government investments dedicated to innovation. The government's Thousand Talents Plan—which encourages Chinese scientists, academics and entrepreneurs living abroad to return to China—has recruited 7,000 experts since 2008, with 1,400 of them recruited specifically by the life sciences committee for biotech. The government has also heavily invested to enhance the intellectual property environment in China. The State Intellectual Property Office (SIPO), China's patent office, has received additional resources to address the growing volume of patent applications and has implemented an expedited examination process. In 2007, SIPO had 2,672 examiners dedicated to examining patents; by 2017, that number had grown to more than 11,500 (SIPO Annual Reports, 2007 and 2017). SIPO also offers attractive benefits to high-demand patent applications, such as covering filing fees and providing tax incentives and monetary rewards. Beyond the government, Chinese venture capital and private equity funds raised $45 billion for life sciences in two and a half years, which contributed to the development of China's flourishing biotech start-up culture. As a result of all of these factors driving innovation, patent applications have soared—more than 50,000 biotech patents were submitted in 2017, up from less than 20,000 in 2010. Some fields leading this growth are natural products, biologics and bioinformatics. Chinese biotech patent applications Growth in Chinese biotech patent application volume since 2000 Demand for new treatments creating an attractive market According to the United Nations, China's population is ageing more rapidly than that of any other country. This fact, along with changing lifestyles and environmental concerns, is driving increasing rates of critical and chronic illness. For example, 36 percent of the world's lung cancer diagnoses come from China, yet the five-year lung cancer survival rate is currently 17 percent lower than the global average. This market landscape creates surging demand for pioneering medical treatments, and investors are turning to Chinese scientists to develop solutions that could not only be sold in China, but enhance treatment worldwide. Major pharmaceutical companies in the west are taking note as well and considering ways to bolster their presence in China as domestic investors gain market share, with many global leaders opening research centers in China and others coordinating research cooperation pacts with Chinese institutions. Globalized approach to regulations easing market entry In March 2018, the China Food and Drug Administration (CFDA) announced it will merge with other administrative bodies to form a national market supervision administration. As part of the restructuring, a new entity is being created that will focus primarily on medical technologies. This is expected to bring increased efficiency and consistency to regulation of pharmaceuticals and medical devices in China. Further, in April 2018, the government launched initiatives to support generic drug research and development as a means to foster innovation and provide more accessible treatment options to Chinese patients. They include providing research grants, as well as expediting the review and approval process of generic drugs based on name-brand drugs with compulsory licenses. These efforts are the latest in a series of reforms aimed at streamlining China's regulatory process to align with international standards. Last August, for example, the CFDA announced it had joined ICH, a global federation of medicines regulators that seeks to harmonize health technology regulations. It also announced it would allow data from clinical trials conducted outside of China to be admitted as part of regulatory filings, a move that fast-tracks new treatments from the lab to the clinic. Overall, these efforts to streamline China's regulatory processes and align them more closely with those outside of China eases entry into the Chinese market for domestic as well as foreign investors and also make it easier for Chinese firms to market their innovations internationally. These developments, along with the impressive growth rate, clearly demonstrate that China is quickly establishing itself as the eastern hub for biotechnology innovation. Organizations looking for growth opportunities in biotech should certainly have China on their radar. However, a successful strategy for growth within any industry sector in China requires a deep understanding of the market and intellectual property landscape, as well as governmental and cultural factors.

#### **US biotech stocks down now.**

Gatlin 21 [(Allison, Author at Investor's Business Daily “Biotech Stocks Hit A Snag — Why Experts Say The Heyday Isn't Over“, Investor's Business Daily, ), 4-9-2021, https://www.investors.com/news/technology/biotech-stocks-why-they-have-skidded-why-experts-are-not-worried/)] TDI

Regulatory and drug-pricing worries have knocked biotech stocks off their Covid pedestal. After seeing massive gains in 2020 amid the Covid-19 vaccine heyday and hitting a high point in early February, biotech stocks have collectively pulled back 21%. Investors are uneasy after the Federal Trade Commission formed a working group to more deeply scrutinize pharmaceutical mergers. Meanwhile, the Food and Drug Administration has delayed a number of drug approvals, and Sen. Bernie Sanders, I-Vt., introduced sweeping drug-pricing legislation. All of this comes amid a backdrop of rising interest rates.

#### CP solves innovation in every other country BUT reversing Chinese lead is key. They can’t get out of this otherwise the aff has zero solvency.

#### China uses biotech gains for massive bio-military advantages over the US – spurs bio-attacks.

**Kuo 17**, Mercy. “The Great US-China Biotechnology and Artificial Intelligence Race.” The Diplomat, 23 Aug. 2017, thediplomat.com/2017/08/the-great-us-china-biotechnology-and-artificial-intelligence-race/.

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.**

#### Bio-attacks cause extinction – overcomes any conventional defense.

Walsh 19, Bryan. End Times: A Brief Guide to the End of the World. Hachette Books, 2019. (Future Correspondent for Axios, Editor of the Science and Technology Publication OneZero, Former Senior and International Editor at Time Magazine, BA from Princeton University)//Elmer

I’ve lived through disease outbreaks, and in the previous chapter I showed just how unprepared we are to face a widespread pandemic of flu or another new pathogen like SARS. But a deliberate outbreak caused by an engineered pathogen would be far worse. We would face the same agonizing decisions that must be made during a natural pandemic: whether to ban travel from affected regions, how to keep overburdened hospitals working as the rolls of the sick grew, how to accelerate the development and distribution of vaccines and drugs. To that dire list add the terror that would spread once it became clear that the death and disease in our midst was not the random work of nature, but a deliberate act of malice. We’re scared of disease outbreaks and we’re scared of terrorism—put them together and you have a formula for chaos. As deadly and as disruptive as a conventional bioterror incident would be, an attack that employed existing pathogens could only spread so far, limited by the same laws of evolution that circumscribe natural disease outbreaks. But a virus engineered in a lab to break those laws could spread faster and kill quicker than anything that would emerge out of nature. It can be designed to evade medical countermeasures, frustrating doctors’ attempts to diagnose cases and treat patients. If health officials manage to stamp out the outbreak, it could be reintroduced into the public again and again. It could, with the right mix of genetic traits, even wipe us off the planet, making engineered viruses a genuine existential threat. And such an attack may not even be that difficult to carry out. Thanks to advances in biotechnology that have rapidly reduced the skill level and funding needed to perform gene editing and engineering, what might have once required the work of an army of virologists employed by a nation-state could soon be done by a handful of talented and trained individuals. Or maybe just one. When Melinda Gates was asked at the South by Southwest conference in 2018 to identify what she saw as the biggest threat facing the world over the next decade, she didn’t hesitate: “A bioterrorism event. Definitely.”2 She’s far from alone. In 2016, President Obama’s director of national intelligence James Clapper identified CRISPR as a “weapon of mass destruction,” a category usually reserved for known nightmares like nuclear bombs and chemical weapons. A 2018 report from the National Academies of Sciences concluded that biotechnology had rewritten what was possible in creating new weapons, while also increasing the range of people capable of carrying out such attacks.3 That’s a fatal combination, one that plausibly threatens the future of humanity like nothing else. “The existential threat that would be most available for someone, if they felt like doing something, would be a bioweapon,” said Eric Klien, founder of the Lifeboat Foundation, a nonprofit dedicated to helping humanity survive existential risks. “It would not be hard for a small group of people, maybe even just two or three people, to kill a hundred million people using a bioweapon. There are probably a million people currently on the planet who would have the technical knowledge to pull this off. It’s actually surprising that it hasn’t happened yet.”

## 4

#### Despite growing rivalry, US-China economic interdependence strong now. Exchange of tech know-how, collaboration science research, and massive US-China STEM pipeline improving relations – but it can easily collapse.

Hass 21[Ryan Hass (Senior Fellow - Foreign Policy, Center for East Asia Policy Studies, John L. Thornton China Center The Michael H. Armacost Chair Chen-Fu and Cecilia Yen Koo Chair in Taiwan Studies Nonresident Fellow, Paul Tsai China Center, Yale Law School), 8-12-2021, "The “new normal” in US-China relations: Hardening competition and deep interdependence," Brookings, <https://www.brookings.edu/blog/order-from-chaos/2021/08/12/the-new-normal-in-us-china-relations-hardening-competition-and-deep-interdependence/> // belle]

The intensification of U.S.-China competition has captured significant attention in recent years. American attitudes toward China have become more negative during this period, as anger has built over disruptions resulting from the COVID-19 pandemic, Beijing’s trampling of Hong Kong’s autonomy, human rights violations in Xinjiang, and job losses to China. Amidst this focus on great power competition, two broader trends in the U.S.-China relationship have commanded relatively less attention. The first has been the widening gap in America’s and China’s overall national power relative to every other country in the world. The second has been the continuing thick interdependence between the United States and China, even amidst their growing rivalry. Even on economic issues, where rhetoric and actions around decoupling command the most attention, trade and investment data continue to point stubbornly in the direction of deep interdependence. These trends will impact how competition is conducted between the U.S. and China in the coming years. SEPARATING FROM THE PACK As America’s unipolarity in the international system has waned, there has been renewed focus on the role of major powers in the international system, including the European Union, Russia, India, and Japan. Each of these powers has a major population and substantial economic weight or military heft, but as my Brookings colleague Bruce Jones has observed, none have all. Only the United States and China possess all these attributes. The U.S. and China are likely to continue amassing disproportionate weight in the international system going forward. Their growing role in the global economy is fueled largely by both countries’ technology sectors. These two countries have unique traits. These include world-class research expertise, deep capital pools, data abundance, and highly competitive innovation ecosystems. Both are benefitting disproportionately from a clustering effect around technology hubs. For example, of the roughly 4,500 artificial intelligence-involved companies in the world, about half operate in the U.S. and one-third operate in China. According to a widely cited study by PricewaterhouseCoopers, the U.S. and China are set to capture 70% of the $15.7 trillion windfall that AI is expected to add to the global economy by 2030. The United States and China have been reinvesting their economic gains to varying degrees into research and development for new and emerging technologies that will continue to propel them forward. While it is not foregone that the U.S. and China will remain at the frontier of innovation indefinitely, it also is not clear which other countries might displace them or on what timeline. Overall, China’s economy likely will cool in the coming years relative to its blistering pace of growth in recent decades, but it is not likely to collapse. DEEP INTERDEPENDENCE At the same time, bilateral competition between the United States and China also is intensifying. Even so, rising bilateral friction has not – at least not yet – undone the deep interdependencies that have built up between the two powers over decades. In the economic realm, trade and investment ties remain significant, even as both countries continue to take steps to limit vulnerabilities from the other. For example, Chinese regulators have been asserting greater control over when and where Chinese companies raise capital; Beijing’s recent probe of ride-hailing app Didi Chuxing provides but the latest example. China’s top leaders have been emphasizing the need for greater technology “self-sufficiency” and have been pouring billions of dollars of state capital into this drive. Meanwhile, U.S. officials have been seeking to limit American investments from going to Chinese companies linked to the military or surveillance sectors. The Security and Exchange Commission’s scrutiny of initial public offerings for Chinese companies and its focus on ensuring Chinese companies meet American accounting standards could result in some currently listed Chinese companies being removed from U.S. exchanges. Both countries have sought to disentangle supply chains around sensitive technologies with national security, and in the American case, human rights dimensions. U.S. officials have sought to raise awareness of the risks for American firms of doing business in Hong Kong and Xinjiang. Even so, U.S.-China trade and investment ties remain robust. In 2020, China was America’s largest goods trading partner, third largest export market, and largest source of imports. Exports to China supported an estimated 1.2 million jobs in the United States in 2019. Most U.S. companies operating in China report being committed to the China market for the long term. U.S. investment firms have been increasing their positions in China, following a global trend. BlackRock, J.P. Morgan Chase, Goldman Sachs, and Morgan Stanley have all increased their exposure in China, matching similar efforts by UBS, Nomura Holdings, Credit Suisse, and AXA. The Rhodium Group estimates that U.S. investors held $1.1 trillion in equities issued by Chinese companies, and that there was as much as $3.3 trillion in U.S.-China two-way equity and bond holdings at the end of 2020. One leg of the U.S.-China economic relationship that has atrophied in recent years has been China’s flow of investment into the United States. This has largely been a product of tightened capital controls in China, growing Chinese government scrutiny of its companies’ offshore investments, and enhanced U.S. screening of Chinese investments for national security concerns. Another area of U.S.-China interdependence has been knowledge production. As U.S.-China technology expert Matt Sheehan has observed, “With the rise of Chinese talent and capital, the exchange of technological know-how between the United States and China now takes place among private businesses and between individuals.” Leading technology companies in both countries have been building research centers in the other. Alibaba, Baidu, and Tencent have all opened research centers in the United States, just as Apple, Microsoft, Tesla, and other major American technology companies rely upon engineering talent in China. In science collaboration, The Nature Index ranks the joint research between the two countries as the world’s most academically fertile. U.S.-China scientific collaboration grew by more than 10% each year on average between 2015 and 2019. Even following the global spread of COVID-19, American and Chinese experts collaborated more during the past year than over the previous five years combined. This has led to over 100 co-authored articles in leading scientific journals and frequent joint appearances in science-focused workshops and webinars. China also is the largest source of international students in the United States. In the 2019-20 year, there were over 370,000 Chinese students in the U.S., representing 34% of international students in colleges and universities. Up until now, many of the top Chinese students have stayed in the United States following graduation and contributed to America’s scientific, technological, and economic development. It remains to be seen whether this trend will continue.

#### Plan hurts US-China relations – means China goes back on it’s promise to regulate IP violations and draws in U.S. crackdown.

Shape 21 [Steven M. Shape; registered patent attorney and electrical engineer who has represented preeminent technology companies in complex, high-stakes Intellectual Property litigation; 2-19-2021, "IP Law Looms Large Over U.S.-China Relations," No Publication, [https://www.mondaq.com/trademark/1038030/ip-law-looms-large-over-us-china-relations //](https://www.mondaq.com/trademark/1038030/ip-law-looms-large-over-us-china-relations%20//) belle]

The U.S. and China were indisputably the two largest parties in the global trade war that consumed much of the last several years. Particularly between early 2018 and late 2019, it seemed as if one could hardly go a week, if that, without hearing something about tariffs, exports, imports, steel, soybeans, then-President Donald Trump, President Xi Jinping and the like. Accusations regarding violations of Intellectual Property law were among the biggest flashpoints, and ultimately, China announced new regulations concerning IP protection in November 2019 as a conciliatory move. Nearly 14 months later, newly inaugurated President Joe Biden has yet to fully clarify his administration's stance toward China. However, it is inevitable that IP rights and their preservation will factor into negotiations between the two economic giants. A look back at the proposed reforms (and their effects) Reports from CNN at the time claimed that China's prospective IP law reforms focused on making the penalties for IP infringement more strict. It would also put the government's increasingly modernized tech infrastructure to use in the discovery and prosecution of such crimes. Beyond that, the proposal carried few specifics. Although it is unclear whether Beijing's gambit worked as the deciding factor for Washington, it certainly did not fail. The two nations agreed in principle on "Phase One" of a new trade agreement December 12, 2019, per The Washington Post, and formalized the deal about a month later. The U.S. pledged not to impose further tariffs and roll back existing import taxes in return for China's IP reforms and agreement to buy American goods. In the 14 months that followed, so much changed. COVID-19's devastating impact on human life and the global economy made it difficult to gauge the positive effects of the tariff relief or IP reform. A report by the South China Morning Post found that China did not meet its import goal for 2020, with some analysts concluding the Phase One target was unrealistic. On the IP front, a Hong Kong news provider noted that Beijing had drafted some specific guidance to protect pharmaceutical patents, trade secrets and copyrights, but it was unclear how well they were being implemented. Additionally, a January 2021 report by the U.S. Patent and Trademark Office (USPTO) found that Chinese policies which offered subsidies for certain trademark and patent applications helped motivate a glut of fraudulent and bad-faith filings in the last few years. The bigger picture of China's IP law A casual observer or someone just learning of this issue might assume that until recently, China had little or no IP laws on the books. Of course, that is not true. However, there are many factors at play complicating the matter of Chinese IP protection policies. As noted in Harvard Business Review, China is quite strict in certain aspects of IP protection: Beijing allows (and encourages) all businesses to impose non-compete agreements to help protect trade secrets and other IP assets. In addition, according to the National Law Review, two new measures were passed in 2020 specifically to combat bad-faith trademark applications, in addition to the other new guidelines being imposed by the China National Intellectual Property Administration (CNIPA) in accordance with the Phase One agreement. All that said, it would be inaccurate to describe Chinese IP law as thoroughly protective for either domestic or foreign innovators. Along with the aforementioned trademark and patent subsidies, considerable controversy stems from "forced technology transfer" policies. According to the University of Oxford's Business Law Blog, foreign companies looking to do business in China must turn over their technology to local firms or be denied the right to operate within China. This effectively means turning over the blueprints (literal or otherwise) to such technology - which is all but equivalent to surrendering the IP. It creates considerable opportunities for infringement, fraud and corruption. Also, in disputes with foreign firms, some local IP courts still markedly favor domestic organizations. Chinese government representatives often resent such accusations of bias or corruption. In their view, the deals represent friendly agreements between businesses, and courts' decisions are not politically motivated. While Oxford noted that FTT guidelines are not as pervasive now as they were a few years ago, they have yet to disappear altogether. The Biden approach: Not dissimilar, but multilateral If the new U.S. Secretary of the Treasury, Janet Yellen, is to be believed, the Biden administration will not tolerate any signs of lapses in China's IP protections. "We need to take on China's abusive, unfair and illegal practices," Yellen said to the Senate Finance Committee at her confirmation hearings. As reported by Bloomberg, she added, "[China has] been stealing intellectual property and engaging practices that give it an unfair technological advantage, including forced technology transfers. And these . are practices that we're prepared to use the full array of tools to address." Biden had expressed similar sentiments during a December interview with The New York Times. However, he also said that they would work with ally nations to "develop a coherent strategy" for addressing cases of IP infringement and other issues - a stance Yellen echoed before the Senate - instead of taking China on in a unilateral and bellicose manner. This more nuanced approach could yield greater cooperation from Beijing and help repair U.S.-China trade relations, but we will likely not know one way or the other for some time. As we saw with the trade war, conflicts between the U.S. and China can quickly escalate and have ripple effects throughout the world. It would thus be wise for all organizations doing business in China to keep themselves abreast of the country's evolving IP regulations and work with a reliable IP services provider to help establish strong protection for their intangible assets.

#### US-China war leads to extinction.

Graham T. Allison 17. Professor and director of the Harvard Kennedy School’s Belfer Center. “How America and China Could Stumble to War.” The National Interest. 4/12/2017. <https://nationalinterest.org/feature/how-america-china-could-stumble-war-20150?page=0%2C6>

In the years ahead, could a collision between American and Chinese warships in the South China Sea, a drive toward national independence in Taiwan or jockeying between China and Japan over islands on which no one wants to live spark a war between China and the United States that neither wants? It may seem hard to imagine—the consequences would be so obviously disproportionate to any gains either side could hope to achieve. Even a non-nuclear war conducted mostly at sea and in the air could kill thousands of combatants on both sides. Moreover, the economic impact of such a war would be massive. A 2016 RAND study found that, after just one year, American GDP could decline by up to 10 percent and Chinese GDP by as much as 35 percent—setbacks on par with the Great Depression. And if a war did go nuclear, both nations would be utterly destroyed. Chinese and American leaders know they cannot let that happen.¶ Unwise or undesirable, however, does not mean impossible. Wars occur even when leaders are determined to avoid them. Events or actions of others narrow their options, forcing them to make choices that risk war rather than acquiesce to unacceptable alternatives. Athens did not want war with Sparta. Kaiser Wilhelm did not seek war with Britain. Mao initially opposed Kim Il-sung’s attack on South Korea in 1950 for fear of blowback. But events often require leaders to choose between bad and worse risks. And once the military machines are in motion, misunderstandings, miscalculations and entanglements can escalate to a conflict far beyond anyone’s original intent.¶ To better understand these dangers, Washington and Beijing have developed scenarios, simulations and war games. These often begin with an unexpected incident or accident. Individuals assigned to play the hand of China or the United States take it from there. Participants in these exercises are repeatedly surprised to find how often and easily small sparks lead to large wars. Today, there are at least three plausible paths to war between the world’s two greatest powers.¶ IN WAR scenarios, analysts use basic concepts made familiar by the U.S. Forest Service. Arsonists cause only a small fraction of fires. Discarded cigarettes, smoldering campfires, industrial accidents and bolts of lightning are much more common sources. Fortunately, in the forest as well as in relations among nations, most sparks do not ignite a blaze.¶ Background conditions often determine which sparks become fires. While Smokey the Bear’s warning that “only you can prevent forest fires” teaches campers and hikers about sparks, the Forest Service posts additional warnings after long dry spells or periods of extreme heat, occasionally closing high-risk areas. Moreover, it regulates the storage of flammable chemicals, propane tanks and gas depots, becoming increasingly stringent as conditions worsen.¶ In relations between China and the United States today, relevant background conditions include geography, culture and history. “History,” Henry Kissinger observed in his first book, “is the memory of states.” China’s memory is longer than most, with the century of humiliation forming a core part of the country’s identity. Recent military engagements are also part of each state’s living memory. The Korean War and Sino-Soviet border conflict taught Chinese strategists not to back down from more powerful adversaries. Moreover, both the American and Chinese militaries acknowledge that the United States has lost, or at least failed to win, four of the five major wars it has entered since World War II.¶ The most pertinent background conditions, however, are Thucydides’s Trap and the syndromes of rising and ruling powers that China and the United States display in full. Thucydides’s Trap is the severe structural stress caused when a rising power threatens to displace a ruling one. Most contests that fit this pattern have ended badly. Over the past five hundred years, a major rising power has threatened to displace a ruling power sixteen times. In twelve of those, the result was war.¶ The rising power syndrome highlights the upstart’s enhanced sense of itself, its interests, and its entitlement to recognition and respect. The ruling power syndrome is essentially the mirror image: the established power exhibiting an enlarged sense of fear and insecurity as it faces intimations of “decline.” As in sibling rivalries, so too in diplomacy one finds a predictable progression reflected both at the dinner table and at the international conference table. A growing sense of self-importance (“my voice counts”) leads to an expectation of recognition and respect (“listen to what I have to say”) and a demand for increased impact (“I insist”). Understandably, the established power views the rising country’s assertiveness as disrespectful, ungrateful and even provocative or dangerous. Exaggerated self-importance becomes hubris; unreasonable fear, paranoia.¶ ¶ LIKE GASOLINE to a match, accelerants can turn an accidental collision or third-party provocation into war. One cluster of accelerants is captured by what Carl von Clausewitz called the “fog of war.” Extending Thucydides’s insight about war as “an affair of chances,” Clausewitz observed that “war is the realm of uncertainty. Three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty.” This profound uncertainty can lead a commander or policymaker to act aggressively when a fuller set of facts would advise caution, and vice versa.¶ The advent of disruptive weapons that promise “shock and awe” makes the fog and uncertainty even worse. With attacks on command-and-control systems, enemies can paralyze a nation’s military command. In Desert Storm, U.S. forces demonstrated version 1.0 of this option. They destroyed Saddam Hussein’s intelligence and cut communication links to his commanders in the field. Isolated, his forces hunkered down; it was like “shooting fish in a barrel,” U.S. pilots remarked.¶ Antisatellite weapons are one accelerant that military planners expect to play a big role in any U.S.-China conflict. Long a subject of science fiction, such weapons are today a fact of life, running the gamut from kinetic ones that physically destroy their targets to quieter systems that use lasers to jam or “dazzle” satellites, rendering them inoperable. In 2007, China successfully destroyed a weather satellite, and it regularly tests its antisatellite capabilities in less dramatic fashion. Satellites provide a crucial link in almost every U.S. military endeavor, from early warning of ballistic-missile launches and providing imagery and weather forecasts to planning operations. Global positioning satellites put the “precision” in almost all the military’s precision-guided munitions and allow ships, planes and ground units to know where they are on the battlefield. The United States depends on this technology more than any of its competitors, making it a perfect target for Chinese military planners.¶ ¶ Cyberspace provides even more opportunities for disruptive technological transformations that could provide a decisive advantage, on the one hand, but might also risk uncontrolled escalation, on the other. The details of offensive cyberweapons remain heavily classified and are constantly evolving. But the public has seen glimpses of them in some cases, such as America’s cyberattack against Iran’s nuclear program or its “left-of-launch” attacks on North Korea’s missile tests. America’s primary cyberspace organizations, the National Security Agency and U.S. Cyber Command, as well as their Chinese counterparts, can now use cyberweapons to silently shut down military networks and critical civilian infrastructure like power grids. Moreover, by employing proxies and assembling an international web of compromised computers, they can disguise the origins of a cyber-operation, slowing the victim’s ability to identify the attacker.¶ Like antisatellite measures, cyberweapons could create a decisive advantage in battle by disrupting the command-and-control and targeting information on which modern militaries depend—and without bloodshed. This presents a dangerous paradox: the very action that attackers believe will tamp down conflict can appear reckless and provocative to the victims. Similarly, cyberattacks that disrupt communication would intensify the fog of war, creating confusion that multiplies the chances of miscalculation.¶ While both the United States and China now have nuclear arsenals that could survive the other’s first strike and still allow for retaliation, neither can be sure its cyber arsenals could withstand a serious cyber assault. For example, a large-scale Chinese cyberattack against the U.S. military’s networks could temporarily cripple Washington’s ability to respond in kind, or even to operate some of its critical command-and-control and surveillance systems. This creates a dangerous use-it-or-lose-it dynamic in which each side has an incentive to attack key links in the other’s computer networks before their capabilities are disabled.¶ Compared with the bluntest instruments of war, especially nuclear bombs, cyberweapons seem to offer the promise of subtlety and precision. But this promise is illusory. Increased connectivity among systems and devices creates a domino effect. Unable to determine how the hacking of one system may affect others, attackers would find it difficult to narrowly tailor the effects of their operation and avoid unintended escalation. In 2016, 180,000 Internet-connected industrial control systems were operating around the world. Along with the proliferation of the “Internet of Things,” which encompasses some ten billion devices worldwide, the number of enticing targets is growing rapidly.¶ Another accelerant might involve compromising the confidentiality of sensitive networks. Some are obvious, such as those that operate nuclear command and control. Each side, however, may perceive other actions quite differently. Take China’s “Great Firewall,” a collection of hardware and software that enables Beijing to monitor and block vast segments of online content. Washington could disable a system essential to the Great Firewall, intending it as a modest, private warning. But for Chinese leaders who regard the ability to control citizens’ access to information as vital, the operation could be misconstrued as the tip of a spear aimed at regime change.¶ Given these background conditions, potential sparks can be frighteningly mundane. Escalation can occur rapidly. The following three scenarios show just how easily the United States and China can stumble into a war that each side hopes to avoid.¶ ¶ CURRENTLY, AMERICAN and allied warships and aircraft are operating in greater proximity to their Chinese counterparts than ever before. U.S. Navy guided-missile destroyers periodically conduct freedom-of-navigation operations near Chinese-controlled islands in the disputed waters of the South China Sea.¶ Suppose that during routine operations an American destroyer passes near Mischief Reef, one of the newly constructed islands where China has built runways for aircraft and installed air and missile defenses. As the ship nears the contested site, Chinese coast guard vessels harass the destroyer, just as they did during the USS Cowpens incident in 2013. Unlike that encounter, however, the U.S. destroyer is unable to swerve in time. It collides with a Chinese ship and sinks it, killing all on board.¶ ¶ The Chinese government now has three options. The dovish course would be to avoid escalation by allowing the American destroyer to leave the area and to protest its actions through diplomatic channels. At the other end of the spectrum, it could adopt an eye-for-an-eye approach and sink the destroyer using aircraft or missiles stationed on Mischief Reef. By refusing to be the “chicken,” while also not wanting to escalate, Beijing could opt for what it believes is a middle course. As the U.S. destroyer attempts to leave the area, a PLA Navy cruiser blocks its way, insisting that the destroyer entered Chinese territorial waters and demanding that its crew surrender and face justice for the deaths of the coast-guard personnel.¶ China believes it is deescalating the situation by allowing for a diplomatic solution, akin to the deal that permitted an American crew to go free after a crash landing near Hainan Island sixteen years ago. The background conditions have changed since that incident. From a U.S. perspective, China’s reckless harassment of the destroyer caused the collision in the first place. China’s attempt to arrest American sailors in international waters would undermine the principles of the law of the sea. Surrendering would have far-reaching repercussions: if the U.S. military will not stand up to China to defend operations conducted by its own navy, what message does that send to America’s allies, including Japan and the Philippines?¶ Not willing to undermine its credibility by surrendering, the destroyer could simply sink the Chinese cruiser blocking its path. Alternatively, to avoid further bloodshed and to show a degree of sensitivity to the nationalistic pressures Chinese leaders face at home, the United States could use a show of force to get the cruiser to back down peacefully. U.S. Pacific Command in Hawaii, in consultation with leaders in Washington, could order nearby aircraft to fly to the area, send an aircraft carrier stationed in Japan toward the South China Sea, and forward-deploy B-2 bombers to Guam. American officials believe these actions will signal their seriousness without risking any further escalation.¶ Events look different to Beijing, especially amid the fog of war. As China sees it, the United States has already sunk a Chinese vessel. Now scores of American aircraft are aloft, threatening attacks on the Chinese cruiser, other naval vessels, or military installations on nearby islands. Mindful of public opinion, Chinese leaders are especially conscious that any further bloodshed inflicted by the United States would force them to retaliate aggressively.¶ But events are running beyond Beijing’s control. As U.S. fighter jets rush to the scene to assist the stranded destroyer, a Chinese antiaircraft battery panics and fires on the oncoming aircraft. The U.S. aircraft take desperate evasive action, and the destroyer begins firing on Chinese antiaircraft sites on the island. Under attack, the Chinese commander on the island bombards the destroyer with antiship missiles. The missiles hit their intended target, killing hundreds of American sailors and sinking the ship. Those who escape are now stranded in small lifeboats.¶ Chinese leaders are desperate to avoid a full-scale war with the United States, but also cannot admit that their chain of command broke down. They claim their actions were a proportionate and defensive response because the American destroyer was the aggressor. Officials in Washington are stunned that China has sunk a $3 billion vessel and killed hundreds of American sailors. Though wary of going to war with China, those in the Situation Room cannot back down: video of the ship’s wreckage and stranded U.S. sailors on cable news and social media has made that impossible. Many in Congress are calling on the administration to authorize war plans based on the doctrine formerly named Air-Sea Battle, which calls for massive air strikes against missile and radar systems on the Chinese mainland. Realizing that attacks on China’s mainland would trigger war, the president authorizes Pacific Command to instead destroy China’s military bases on disputed islands in the South China Sea. The president reasons that this is a proportionate response, since these islands were directly responsible for the sinking of the destroyer. Furthermore, eliminating these military bases will allow U.S. ships to rescue the sailors stranded nearby. Most important, such an action would target only China’s artificial islands, leaving its mainland untouched.¶ President Xi Jinping and other Chinese officials do not make this distinction. For years they have told the public that China has undisputed sovereignty over these islands. They are an integral part of China proper, and America has just attacked them. (Americans who scoff should recall that the Japanese attack on Pearl Harbor struck neither the mainland nor even a U.S. state, yet still rallied a nation to war.) Many in China are demanding that Xi order the PLA to destroy U.S. military bases in Guam, Japan and elsewhere in the Pacific. Some want China to attack the United States itself. No one is calling for China to exercise restraint. As millions of its citizens’ social-media postings are reminding the government, after its century of humiliation at the hands of sovereign powers, the ruling Communist Party has promised: “never again.”¶ Still, President Xi clings to the hope that war can be avoided, an impossibility if China begins attacking U.S. military bases in Guam or Japan, killing soldiers and civilians and triggering retaliatory attacks on the Chinese mainland. Seeking a proportionate response to the U.S. attack on China’s island bases, Xi instead approves an alternative plan: using lasers, electronic and kinetic weapons to destroy or disable all U.S. military satellites in orbit above the crisis area, and using cyberattacks to cripple American command-and-control systems throughout the Asia-Pacific. The goal is to deescalate: Xi hopes that the United States will be shocked into backing down.¶ But from the American perspective, these “blinding” attacks are indistinguishable from the first stage of a coordinated attack on the U.S. aircraft carrier and its strike group sailing from Japan—an event for which the PLA has spent decades developing its “carrier-killer” antiship ballistic missiles. The ninety-thousand-ton carrier, a floating city of 5,500 sailors that the United States describes as sovereign American territory, is simply too big to lose. The president is not willing to take the risk. On the advice of the Joint Chiefs of Staff, the president reluctantly approves the only plan ready on short notice that has a chance of saving the carrier: a war plan based on Air-Sea Battle.¶ Using those assets still operational after the Chinese attack, the United States military begins destroying China’s “kill chains,” the various satellite and surveillance systems that allow Beijing to accurately target American carriers with its antiship missiles. It also launches massive cruise missile and stealth bomber attacks on PLA missile sites and air bases on the Chinese mainland, which could at any moment be used to sink U.S. vessels anywhere within the first island chain.¶ The attacks provoke exactly what they intended to avoid. Its mainland now under attack, and the targeting systems needed to operate China’s antiship weapons about to be lost, China must use them or lose them. Xi authorizes attacks on all U.S. warships within range, including the carrier group. American aircraft and naval escorts intercept Chinese bombers and fighter jets flying to the carrier, but a swarm of DF-21D ballistic missiles—the so-called carrier killers—prove too much to handle. Enough reach their target to sink the carrier, killing most of the 5,500 sailors on board—far more than died during Pearl Harbor. The dynamics of playing chicken with cyber and space weapons over the South China Sea has transformed a tiny spark into a roaring fire.¶ ¶ IF TAIWAN were an independent nation, it would be among the most successful countries in the world. Its hardworking population of twenty-three million has developed a market economy twice the size of the Philippines, Thailand or Vietnam. Although many in Taiwan want independence, China views it as a province. Beijing is prepared to do whatever it takes to keep Taipei from asserting its sovereignty. No other country has been prepared to fight China over the matter.¶ Suppose, however, that the Chinese government were to substantially increase repression at home, including in Hong Kong, where China promised to maintain considerable autonomy and freedom when Britain returned control of the city in 1997. Enraged that the Chinese government is backtracking on its promises, residents of Hong Kong take to the streets to demand that Beijing uphold its commitment to “One Country, Two Systems.” As the protests drag on for weeks with no resolution in sight, Xi orders the military to do what it did in Tiananmen Square in 1989: crush the protests.¶ The ensuing violence shocks the Taiwanese, particularly the younger generation. Pro-independence and anti-Beijing sentiment soars. In this atmosphere, the Taiwanese president is emboldened to ramp up rhetoric emphasizing her people’s hard-won rights and democracy. Her political allies go further, insisting that what has occurred in Hong Kong proves that Taiwan can never guarantee its citizens’ freedom without becoming a sovereign, independent country. To signal disapproval of Chinese regression in Hong Kong, the American president pointedly announces his respect for the Taiwanese president’s strong stance and declares that the 1979 Taiwan Relations Act fully commits the United States to defend Taiwan against a Chinese invasion.¶ This is a major break from the long-standing U.S. policy of “strategic ambiguity” on the issue, and the Taiwanese president interprets it as tacit endorsement of a move toward independence. In an interview with the New York Times , she announces that Taiwan will apply for full membership to the UN (a move that China has long opposed) and rejects the so-called 1992 Consensus, under which both parties had agreed to the One-China concept while allowing for differing interpretations of what it actually meant. To punish Taiwan’s insubordination and scare it into backing down, China conducts an enhanced version of the Third Taiwan Strait Crisis by barraging Taiwanese waters with “tests” of ballistic and cruise missiles, severely interrupting the commercial shipping that constitutes the island’s lifeline to the world. When Taipei still refuses to withdraw its membership application, China uses other weapons, including mine-laying drones, to further disrupt shipping into and out of Taiwan.¶ As a small island nation, Taiwan imports 70 percent of its food and most of its natural resources, including energy. A sustained blockade would grind its economy to a halt and cause large-scale food shortages. Despite opposition to Taiwan’s application to join the United Nations, the United States feels obliged to prevent its strangulation. Many pro-Taiwan members of Congress are demanding that the White House send aircraft carriers to Taiwan’s aid, just as Bill Clinton did during the 1995–96 crisis. But the administration knows that China’s antiship ballistic missiles would now pose a serious threat to any U.S. carriers moving into the area, and the American public has little stomach for another war.¶ Instead, U.S. Pacific Command offers to escort commercial shipping through the affected seas, a gesture of support but not of willingness to fight. The escort campaign puts U.S. warships at risk of being sunk by the Chinese missile barrage, either deliberately or accidentally—an event that could instantly kill more than one thousand Americans and spark calls for retaliation. In this scenario, a Chinese antiship missile—ostensibly fired as part of ongoing test barrages—sinks the USS John P. Murtha , an amphibious transport dock ship acting as an escort to civilian shipping. All of the nearly eight hundred sailors and marines aboard are killed—more than the United States lost in the first year of the Iraq War.¶ China insists that the sinking was accidental; the Murtha merely got in the way of a missile fired at a random patch of ocean. It reminds Washington that America accidently bombed China’s embassy in Belgrade in 1999. But in Washington, the secretary of defense and the chairman of the joint chiefs urge the president not to be deceived by this explanation. Instead they urge him to authorize the Air-Sea Battle plan to strike PLA antiship missile-launch sites on the mainland.¶ Confronted with the sinking of the Murtha, the president accedes to pressure from military and political advisers, and agrees to preemptively strike antiship and other ballistic-missile systems on the Chinese mainland. Because China’s conventional and nuclear missiles are kept in the same locations, and their command-and-control systems are intertwined, Beijing mistakenly believes the United States is trying to eliminate its nuclear arsenal in a surprise first strike. In a desperate attempt to “deescalate by escalating”—an Orwellian doctrine that is nevertheless a pillar of Russian military strategy—China fires one of its land-based, nuclear-tipped ballistic missiles into an empty tract of ocean south of Okinawa. The nuclear threshold has been crossed. And while no lives have been lost in the strike, it is but a short step from here to all-out nuclear war.¶ ¶ THE SPARK to a Sino-American clash need not initially involve American or Chinese military forces. Instead, it might result from a confrontation with or between third-party allies. Such a scenario nearly became reality in 2010, when North Korea sank the South Korean warship Cheonan, killing forty-six South Korean sailors. China supported North Korea’s denial of involvement. Seoul, meanwhile, insisted that Pyongyang be held accountable. Ultimately, the two Koreas and their allies stepped back from the brink. But with a new set of background conditions and accelerants today, it is not clear that it would be so easy to avoid war, especially if the third parties involved were less inured to the sort of slow, grinding tensions that the Korean Peninsula has endured for decades.¶ Besides South Korea, the other major U.S. ally in China’s immediate vicinity is Japan, a country with a post–World War II history of pacifism, but whose politics have become increasingly militaristic in recent years. Conservative Japanese politicians have spoken ever more stridently about revising the pacifist constitution imposed on their country by the United States. They have also been chafing against Chinese claims of sovereignty in the East and South China Seas. In a crisis involving its historical rival Beijing, any steps Tokyo takes would certainly be shaped by these memories, and by the Japanese government’s shifting attitude toward military force.¶ A likely flashpoint is the Senkaku Islands (known in China as the Diaoyu Islands), located near valuable fishing grounds, trade routes and potential oil reserves in the East China Sea. The United States controlled the islands after World War II, before returning them to Japan in the early 1970s. That same decade, China began claiming sovereignty over the islands. Chinese ships regularly pass through these waters, raising tensions between Beijing and Tokyo and risking a collision that could set off a chain reaction.¶ Consider a scenario that provided the story line for a recent war game designed by the RAND Corporation. A group of Japanese ultranationalists set sail for the Senkakus in small civilian watercraft. On social media, they explain that they are headed for Kuba Jima, one of the smaller islands, which they intend to claim and occupy on behalf of Japan. They land and begin building unidentified structures. Taking a page out of the Chinese playbook, they live stream their activities for the world to see. China reacts swiftly, its coast guard arriving within hours with officers who arrest the Japanese dissidents and take them back to the Chinese mainland for trial. Does Japan allow them to face justice in a Chinese court? It could. Instead, rather than lose face, Japan dispatches some of its own coast-guard vessels to intercept the ship carrying the ultranationalists and prevent them from being taken to China.¶ A pileup ensues as both the PLA Navy and the Japan Maritime Self-Defense Force deploy warships and fighter planes to the area. Neither side backs down. To make matters worse, some of the Japanese vessels land amphibious troops to occupy Kuba Jima, doubling down on the nationalists’ actions. A skirmish has become a military confrontation. In an urgent call, the Japanese prime minister reminds the U.S. president that Tokyo expects Washington to uphold the seven-decade-old mutual defense treaty, noting that senior officials have repeatedly confirmed that America’s commitment applies to the Senkakus.¶ As the standoff enters its third day, the president and his National Security Council must decide: Does the United States wholeheartedly respond to Japan’s appeal, putting air power over the disputed island to protect the Japanese troops now on the ground there? Or is there a more restrained course that will satisfy the Japanese without antagonizing China and further escalating the tense naval standoff? The president opts for the latter, directing the Japan-based carrier strike group to patrol outside the range of the PLA’s land-based carrier-killer missiles, but keeping aircraft and submarines close enough to aid Japanese vessels and territory if things get ugly.¶ They do. The next morning, a Chinese destroyer collides with a Japanese fishing boat in the crowded waters off the Senkakus, and soon fighter jets from both sides are provocatively buzzing their opponent’s warships. The standoff erupts into a brief, bloody naval battle as a Japanese captain, fearing for his ship’s safety, downs one of the low-flying Chinese fighters, and the PLA Navy warships, in return, sink his vessel.¶ ¶ Both sides are at the edge of war at this point, and so is the United States, which is in a position to sink Chinese vessels with its hidden attack submarines or to send its carrier’s air wing into action. At this juncture, however, before the next decision has been made, something unexpected happens. All communications between Japanese forces on and around the Senkakus and their headquarters go dark.¶ A cyberattack has severely disrupted one of the Japanese military’s command-and-control systems. The United States and Japan immediately blame China. The attacker has even left the telltale signs of the PLA’s offensive hacking unit. There is little hesitation in Washington or at U.S. Pacific Command about what to do next. To prevent the Japanese naval force from being annihilated while it is incommunicado, U.S. submarines sink three PLA Navy warships off the Senkakus with torpedoes. China, Japan and the United States have now fired their opening shots in a three-nation war.¶ But what if it was not the PLA that launched the cyberattack after all? What if it was a carefully timed false-flag operation by Russia, seeking to draw the United States and China into a conflict in order to distract Washington from its wrestling match with Moscow over Ukraine? By the time intelligence agencies around the world learn the truth, it will be too late. The Kremlin has played its hand brilliantly.¶ From the Senkakus, the war zone spreads as China attacks more Japanese vessels elsewhere in the East China Sea. Tokyo is desperate for the United States to commit its carrier strike group to the fight. If Washington makes that call, the same point of no return may well be crossed as in the collision-at-sea scenario: the destruction of one of the crown jewels of the U.S. Navy and the loss of life of all aboard could be the tragedy that the U.S. administration is forced to avenge with widening attacks on Chinese forces in a full-scale Pacific war.¶ WAR BETWEEN the United States and China is not inevitable, but it is certainly possible. Indeed, as these scenarios illustrate, the underlying stress created by China’s disruptive rise creates conditions in which accidental, otherwise inconsequential events could trigger a large-scale conflict. That outcome is not preordained: out of the sixteen cases of Thucydides’s Trap over the last five hundred years, war was averted four times. But avoiding war will require statecraft as subtle as that of the British in dealing with a rising America a century ago, or the wise men that crafted a Cold War strategy to meet the Soviet Union’s surge without bombs or bullets. Whether Chinese and American leaders can rise to this challenge is an open question. What is certain is that the fate of the world rests upon the answer.

#### Extinction – nuke war fallout creates Ice Age and mass starvation.

Steven **Starr 15**. “Nuclear War: An Unrecognized Mass Extinction Event Waiting To Happen.” Ratical. March 2015. <https://ratical.org/radiation/NuclearExtinction/StevenStarr022815.html> TG

A war fought with 21st century strategic nuclear weapons would be more than just a great catastrophe in human history. If we allow it to happen, such a war would be a mass extinction event that [ends human history](https://ratical.org/radiation/NuclearExtinction/StarrNuclearWinterOct09.pdf). There is a profound difference between extinction and “an unprecedented disaster,” or even “the end of civilization,” because even after such an immense catastrophe, human life would go on. But extinction, by definition, is an event of utter finality, and a nuclear war that could cause human extinction should really be considered as the ultimate criminal act. It certainly would be the crime to end all crimes. The world’s leading climatologists now tell us that nuclear war threatens our continued existence as a species. Their studies predict that a large nuclear war, especially one fought with strategic nuclear weapons, would create a post-war environment in which for many years it would be too cold and dark to even grow food. Their findings make it clear that not only humans, but most large animals and many other forms of complex life would likely vanish forever in a nuclear darkness of our own making. The environmental consequences of nuclear war would attack the ecological support systems of life at every level. Radioactive fallout produced not only by nuclear bombs, but also by the destruction of nuclear power plants and their spent fuel pools, would poison the biosphere. Millions of tons of smoke would act to [destroy Earth’s protective ozone layer](https://www2.ucar.edu/atmosnews/just-published/3995/nuclear-war-and-ultraviolet-radiation) and block most sunlight from reaching Earth’s surface, creating Ice Age weather conditions that would last for decades. Yet the political and military leaders who control nuclear weapons strictly avoid any direct public discussion of the consequences of nuclear war. They do so by arguing that nuclear weapons are not intended to be used, but only to deter. Remarkably, the leaders of the Nuclear Weapon States have chosen to ignore the authoritative, long-standing scientific research done by the climatologists, research that predicts virtually any nuclear war, fought with even a fraction of the operational and deployed nuclear arsenals, will leave the Earth essentially uninhabitable.

## 5

#### CP Text: the United States should

#### -invest $25 billion into 25 production lines dedicated solely to COVID-19 vaccines to boost global vaccine production managed by the Biomedical Advanced Research and Development Authority.

#### -distribute 8 billion doses of COVID vaccines using an equitable distribution framework prioritizing developing countries in the Global South.

#### The CP solves the entirety of the case and does it faster.

Stankiewicz 21 Mike Stankiewicz 5-6-2021"Opinion: For just $25 billion, the U.S. could jump-start a project to quickly vaccinate the entire world against COVID" <https://www.marketwatch.com/story/for-just-25-billion-the-u-s-could-jump-start-a-project-to-quickly-vaccinate-the-entire-world-against-covid-11614898552> (a press officer in Public Citizen's communication's department, where he focuses on legislative policy and health-orientated advocacy)//Elmer

Despite wealthy countries such as the U.S. ramping up COVID-19 vaccination efforts, **it** still **may** **take years to vaccinate the world**, especially poorer countries, and the economic and humanitarian impacts could be devastating. But **an injection of** **just $25 billion** **into global vaccine production efforts by the U.S.** government **could save millions of lives** and help prevent economic disaster. The most up-to-date numbers paint incredibly different futures between wealthy and low-income countries. At the current rate of vaccination, analysts predict that developing countries, including almost all of Southeast Asia, may not reach meaningful vaccine coverage until 2023. Comparatively, President Joe Biden has promised that the U.S. will have enough vaccine doses to inoculate every adult within the next three months. Increased fatalities And as wealthy countries such as the U.S. are starting to see lower death, transmission and hospitalization rates, low-income countries are experiencing increased hardship and fatalities. Countries such as Hungry are being forced to tighten restrictions as infection rates increase, and deaths in Africa have spiked by 40% in the past month, according to the World Health Organization (WHO). No country can be left behind in this global pandemic, and the U.S. is in a unique position to make sure every country gets the ample amount of vaccines they need. **Public Citizen research has found that just a $25 billion investment in COVID-19 vaccine production by the U.S. government would produce enough vaccine for developing countries, potentially shaving years from the global pandemic**. Public Citizen estimates that **8 billion doses of** National Institutes of Health-**Moderna MRNA**, +1.98% vaccine can be **produced** **for** just over **$3 per dose**. To bolster production and supply the necessary 8 billion doses, it would take **$1.9 billion to fund** the necessary **25 production lines**. Another **$19 billion** would pay **for materials and labor**, and **$3 billion** would **compensate** **Moderna** **for making technology available to manufacturers** in other countries. An additional $500 million would cover costs to staff and run **a rapid-response federal program that provides technical assistance and facilitates technology transfer to manufacturers and works with the WHO’s technology hub.** In total, vaccinating the world would cost less than 1.4% the total of Biden’s $1.9 trillion COVID relief plan. But such a program also needs to be properly managed to be successful. To help facilitate these efforts, the Biden administration should also **designate** the government’s Biomedical Advanced Research and Development Authority (**BARDA**) **to lead** the world-wide **vaccine manufacturing effort**. BARDA has the **necessary experience to coordinate** **an initiative of this scale** with the WHO, building on its partnership to build pandemic flu manufacturing capacity in developing countries after the bird-flu scare of 2006. Widespread vaccines would help U.S. economy These efforts would dramatically increase access to vaccines in developing countries and speed up global vaccination by years, saving countless lives. But allowing the current vaccine supply crisis to continue is not just inhumane, it is also not in our own economic interest to do so.

## 6

#### Ethics must begin a priori:

#### 1. Uncertainty – our experiences are inaccessible to others which allows people to say they don’t experience the same, however a priori principles are universally applied to all agents.

#### 2. Bindingness – I can keep asking “why should I follow this” which results in skep since obligations are predicated on ignorantly accepting rules. Only reason solves since asking “why reason?” requires reason which concedes its authority and equally proves agency as constitutive

#### That means we must universally will maxims— any non-universalizable norm justifies someone’s ability to impede on your ends.

#### Thus, the standard is consistency with the categorical imperative.

#### Prefer the standard:

#### A - freedom is the key to the process of justification of arguments. Willing that we should abide by their ethical theory presupposes that we own ourselves in the first place. Thus, it is logically incoherent to justify the neg arguments/standard without first willing that we can pursue ends free from others

#### B - Frameworks are topicality interps of the word ought so they should be theoretically justified. Prefer on resource disparities—a focus on evidence and statistics privileges debaters with the most preround prep which excludes lone-wolfs who lack huge evidence files. A debate under my framework can easily be won without any prep since huge evidence files aren’t required.

**Negate** -

#### 1 - The aff encourages free riding- that treats people as ­means to an end and takes advantage of their efforts which violates the principle of humanity

**Van Dyke 2** Raymond Van Dyke, 7-17-2018, "The Categorical Imperative for Innovation and Patenting," IPWatchdog, <https://www.ipwatchdog.com/2018/07/17/categorical-imperative-innovation-patenting/id=99178/> SJ//DA recut SJKS

Also, **allowing the free taking of ideas, content and valuable data, i.e., the fruits of individual intellectual endeavor**, would disrupt capitalism in a radical way. **The resulting more secretive approach in support of the above free-riding Statement** would be akin to a Communist environment **where the State owned everything and the citizen owned nothing, i.e., the people “consented” to this. It is, accordingly, manifestly clear that no reasonable and supportable Categorical Imperative can be made for the unwarranted theft of property, whether tangible or intangible,** apart from legitimate exigencies.

#### 2 - IPs are a necessary check on companies free-riding off associations of quality.

Wong et al 20 [Liana, Ian, and Shayerah; Analyst in International Trade and Finance; Specialist in International Trade and Finance; Specialist in International Trade and Finance; “Intellectual Property Rights and International Trade,” \*Updated\* 5/12/20; CRS; <https://www.everycrsreport.com/files/20200512_RL34292_2023354cc06b0a4425a2c5e02c0b13024426d206.pdf>] Justin

Trademark protection in the United States is governed jointly by state and federal law. The main federal statute is the Lanham Act of 1946 (Title 15 of the United States Code). Trademarks permit the seller to use a distinctive word, name, symbol, or device to identify and market a product or company. Marks can also be used to denote services from a particularly company. The trademark allows quick identification of the source of a product, and for good or ill, can become an indicator of a product's quality. If for good, the trademark can be valuable by conveying an instant assurance of quality to consumers. Trademark law serves to prevent other companies with similar merchandise from free-riding on the association of quality with the trademarked item. Thus, a trademarked good may command a premium in the marketplace because of its reputation. To be eligible for a trademark, the words or symbol used by the business must be sufficiently distinctive; generic names of commodities, for example, cannot be trademarked. Trademark rights are acquired through use or through registration with the PTO.