# NEG – China AI Leadership Good – Classic HJV

**NEG**

### 1nc – Democracy !

#### China is surpassing the US in AI dominance now – the plan flips the script

Smith 22, Aaron Smith, 1-6-2022, "How China surpassed the U.S. in the race for AI supremacy," USC Global Policy Institute, https://uscgpi.com/2022/01/06/how-china-surpassed-the-u-s-in-the-race-for-ai-supremacy/, accessed 7-15-2022

Nick Chaillan, the U.S. Department of State’s first-ever software chief, [resigned](https://thehill.com/policy/cybersecurity/576213-former-pentagon-official-says-china-has-won-artificial-intelligence) in September 2021. He claimed that the United States had “no competing fighting chance against China in the next 15 to 20 years.”

China is currently winning the race toward global dominance in artificial intelligence. But how did China get so far ahead?

AI technology will play a major role in driving economic growth and national security in the foreseeable future. China’s AI investment is a new development that only started to gain traction in the past several years. In [2015,](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) China was still behind the United States, along with French and German AI firms as well. However, one event in 2016 pushed China on its upward slope toward AI supremacy. DeepMind, a leading AI application company, created a machine that [beat the world champion](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) in Go, the world’s most complex board game.

By this time, many American companies had already constructed machines capable of beating chess world champions. However, Go is thousands of times more complex than chess, so many were confident that it would be impossible to create such a machine. Yet, China did it.

Skepticism about the potential of China’s AI technology triggered a reaction from [President Xi Jinping](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy); contrary to what was being said, he declared that China would become a leader in AI. In the years that followed, [Beijing](https://nypost.com/2021/10/11/pentagon-software-chief-nicolas-chaillan-resigns/) prioritized artificial intelligence and cyber capabilities over traditional military spending, leading to an aggressive approach in dominating the AI industry with a specific focus on surveillance and data collection. Xi wanted major tech companies, instead of government agencies, to lead this innovation. He appointed [five national champions](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) — [Alibaba for smart cities](https://fortune.com/2021/07/02/china-artificial-intelligence-ai-business-ecosystems-tencent-baidu-alibaba/); Baidu for autonomous driving; iFlytek for voice recognition; SenseTime for facial recognition; and Tencent for computer vision for medical imaging. Xi also [set targets](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) that would ensure China’s dominance in AI technology and other related sectors by 2030.

And just one year after Xi set his targets and appointed AI leaders, China saw major advancements in its race against the United States. Investments in Chinese AI startups [overtook investments](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) in American AI startups; China filed 2.5 times more patents than the United States for AI technologies by 2018. And in 2020 China had three times the number of college graduates in the computer sciences than the United States did.

[WeChat](https://www.vox.com/recode/22725044/china-ai-race-pentagon-wechat), which was developed by Tencent, became the world’s largest mobile app in 2018 with over 1 billion monthly users. The app can collect major quantities of data thanks to government support and Newark privacy policies.

Today, China dominates the various sectors of AI technology. In financial technology, Apple Pay in the United States has [22 million users](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy). On the other hand, Tencent’s WeChat Pay has [900 million users](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) in China and greater technological capabilities than Apple Pay, which allows the app to generate vast amounts of data about consumer behaviors that Chinese systems can then use to develop more advanced technology. Moreover, in 2018 Chinese consumers spent [$19 trillion](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) through mobile payments, while the United States is still struggling to hit [$1 trillion](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy).

In facial recognition, Washington essentially dropped out of the race due to privacy concerns and the ethics of how this technology could be deployed. Beijing, however, claimed the [top 5 spots](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) in the 2018 international competition for facial recognition. Chinese firms individually control a third of the world’s security cameras, can capture high-definition color images with minimal light, and specialize in thermal imaging. Together, they work with Beijing to perfect this technology for both profit and security purposes.

China is also beating the United States in speech technology. [iFlytek](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy), the world’s top voice recognition company, has a user base of almost double the number of  Siri users, with [700 million people](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) using iFlytek. And once again, Chinese teams claimed three of the top five spots, including first place, at Stanford University’s international competition for machine reading comprehension.

Of the world’s [top five commercial drone brands](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy), three of them are Chinese brands, while just one is American, with Shenzhen drone company DJI controlling 70% of the global market of drone technology.

Additionally, 5G infrastructure is essential for a future that runs on AI technology. China has two firms within the top four global leaders for providing this technology, while the United States. has none. Huawei, a Chinese firm, is the world’s leading supplier of 5G infrastructure and technology, occupying [28%](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) of the global market share — equalling the combined shares of its two biggest competitors.

However, many consider China far behind the United States when it comes to AI ethics and governance. American social culture and political culture values privacy over security and fosters distrust in authority and the government. American values have led to early debates and conversations on how to regulate AI and its algorithms. These discussions have made it difficult for the United States to significantly advance its AI technology.

On the other hand, AI ethics have not been as large of an issue in China. Public opinions in China about privacy have allowed AI to quickly develop. In fact, it wasn’t until October 2021 that China issued its [first guidelines](https://www.scmp.com/tech/big-tech/article/3150789/chinese-ai-gets-ethical-guidelines-first-time-aligning-beijings-goal?utm_source=Sailthru&utm_medium=email&utm_campaign=Recode%2010.13.2021&utm_term=Recode) on AI ethics, prioritizing user rights and data control.

China is not just trying to gain global dominance in AI technology but is currently succeeding and dominating all aspects of the field. AI will have the potential to greatly affect commerce, national security and general society in the next couple of decades.

If it wants to keep up, the United States needs to make a decision about whether it will invest in AI technology and begin to seriously compete with China, or continue to waiver on AI and prove Nick Chaillan right.

#### Chinese development of AI is key – western led AI innovation will lead to economic devastation and imperialist wars

Feng 18 – Professor of law at Tsinghua University and one of China’s most prominent legal scholars. He spoke at the Berggruen Institute’s China Center workshop on artificial intelligence in 2018 in Beijing. (Xiang, The Washington post, “AI will spell the end of capitalism”, 5-3-2018, https://www.washingtonpost.com/news/theworldpost/wp/2018/05/03/end-of-capitalism/)//mj

BEIJING — The most momentous challenge facing socio-economic systems today is the arrival of artificial intelligence. If AI remains under the control of market forces, it will inexorably result in a super-rich oligopoly of data billionaires who reap the wealth created by robots that displace human labor, leaving massive unemployment in their wake.

But China’s socialist market economy could provide a solution to this. If AI rationally allocates resources through big data analysis, and if robust feedback loops can supplant the imperfections of “the invisible hand” while fairly sharing the vast wealth it creates, a planned economy that actually works could at last be achievable.

The more AI advances into a general-purpose technology that permeates every corner of life, the less sense it makes to allow it to remain in private hands that serve the interests of the few instead of the many. More than anything else, the inevitability of mass unemployment and the demand for universal welfare will drive the idea of socializing or nationalizing AI.

Marx’s dictum, “From each according to their abilities, to each according to their needs,” needs an update for the 21st century: “From the inability of an AI economy to provide jobs and a living wage for all, to each according to their needs.”

Even at this early stage, the idea that digital capitalism will somehow make social welfare a priority has already proven to be a fairytale. The billionaires of Google and Apple, who have been depositing company profits in offshore havens to avoid taxation, are hardly paragons of social responsibility. The ongoing scandal around Facebook’s business model, which puts profitability above responsible citizenship, is yet another example of how in digital capitalism, private companies only look after their own interests at the expense of the rest of society.

One can readily see where this is all headed once technological unemployment accelerates. “Our responsibility is to our shareholders,” the robot owners will say. “We are not an employment agency or a charity.”

These companies have been able to get away with their social irresponsibility because the legal system and its loopholes in the West are geared to protect private property above all else. Of course, in China, we have big privately owned Internet companies like Alibaba and Tencent. But unlike in the West, they are monitored by the state and do not regard themselves as above or beyond social control.

It is the very pervasiveness of AI that will spell the end of market dominance. The market may reasonably if unequally function if industry creates employment opportunities for most people. But when industry only produces joblessness, as robots take over more and more, there is no good alternative but for the state to step in. As AI invades economic and social life, all private law-related issues will soon become public ones. More and more, regulation of private companies will become a necessity to maintain some semblance of stability in societies roiled by constant innovation.

I consider this historical process a step closer to a planned market economy. Laissez-faire capitalism as we have known it can lead nowhere but to a dictatorship of AI oligarchs who gather rents because the intellectual property they own rules over the means of production. On a global scale, it is easy to envision this unleashed digital capitalism leading to a battle between robots for market share that will surely end as disastrously as the imperialist wars did in an earlier era.

For the sake of social well-being and security, individuals and private companies should not be allowed to possess any exclusive cutting-edge technology or core AI platforms. Like nuclear and biochemical weapons, as long as they exist, nothing other than a strong and stable state can ensure society’s safety. If we don’t nationalize AI, we could sink into a dystopia reminiscent of the early misery of industrialization, with its satanic mills and street urchins scrounging for a crust of bread.

The dream of communism is the elimination of wage labor. If AI is bound to serve society instead of private capitalists, it promises to do so by freeing an overwhelming majority from such drudgery while creating wealth to sustain all.

If the state controls the market, instead of digital capitalism controlling the state, true communist aspirations will be achievable. And because AI increasingly enables the management of complex systems by processing massive amounts of information through intensive feedback loops, it presents, for the first time, a real alternative to the market signals that have long justified laissez-faire ideology — and all the ills that go with it.

Going forward, China’s socialist market economy, which aims to harness the fruits of production for the whole population and not just a sliver of elites operating in their own self-centered interests, can lead the way toward this new stage of human development.

If properly regulated in this way, we should celebrate, not fear, the advent of AI. If it is brought under social control, it will finally free workers from peddling their time and sweat only to enrich those at the top. The communism of the future ought to adopt a new slogan: “Robots of the world, unite!”

### 1nc – CCP Collapse !

#### China is winning the AI race now, BUT a sustained edge over the US is key – it’s key to the Chinese economy

**Shen et al ’22** (Responsible for 4x China Analytics practice to ~100 data scientists, developers and business translators in ~2 years, “The next frontier for AI in China could add $600 billion to its economy,” QuantumBlack AI by McKinsey, 6/7/22) https://www.mckinsey.com/business-functions/quantumblack/our-insights/the-next-frontier-for-ai-in-china-could-add-600-billion-to-its-economy)

By 2030, AI could disrupt transportation and other key sectors in China, adding significant economic value—but only if strategic cooperation and capability building occur across multiple dimensions. In the past decade, China has built a solid foundation to support its AI economy and made significant contributions to AI globally. Stanford University’s AI Index, which assesses AI advancements worldwide across various metrics in research, development, and economy, ranks China among the top three countries for global AI vibrancy. 1 On research, for example, China produced about one-third of both AI journal papers and AI citations worldwide in 2021. In economic investment, China accounted for nearly one-fifth of global private investment funding in 2021, attracting $17 billion for AI start-ups. 2 Today, AI adoption is high in China in finance, retail, and high tech, which together account for more than one-third of the country’s AI market (see sidebar “Five types of AI companies in China”). 3 In tech, for example, leaders Alibaba and ByteDance, both household names in China, have become known for their highly personalized AI-driven consumer apps. In fact, most of the AI applications that have been widely adopted in China to date have been in consumer-facing industries, propelled by the world’s largest internet consumer base and the ability to engage with consumers in new ways to increase customer loyalty, revenue, and market valuations. So what’s next for AI in China?In the coming decade, our research indicates that there is tremendous opportunity for AI growth in new sectors in China, including some where innovation and R&D spending have traditionally lagged global counterparts: automotive, transportation, and logistics; manufacturing; enterprise software; and healthcare and life sciences. (See sidebar “About the research.”) In these sectors, we see clusters of use cases where AI can create upwards of $600 billion in economic value annually. (To provide a sense of scale, the 2021 gross domestic product in Shanghai, China’s most populous city of nearly 28 million, was roughly $680 billion.) In some cases, this value will come from revenue generated by AI-enabled offerings, while in other cases, it will be generated by cost savings through greater efficiency and productivity. These clusters are likely to become battlegrounds for companies in each sector that will help define the market leaders. Unlocking the full potential of these AI opportunities typically requires significant investments—in some cases, much more than leaders might expect—on multiple fronts, including the data and technologies that will underpin AI systems, the right talent and organizational mindsets to build these systems, and new business models and partnerships to create data ecosystems, industry standards, and regulations. In our work and [global research](https://www.mckinsey.com/business-functions/quantumblack/our-insights/global-survey-the-state-of-ai-in-2021), we find many of these enablers are becoming standard practice among companies getting the most value from AI. To help leaders and investors marshal their resources to accelerate, disrupt, and lead in AI, we dive into the research, first sharing where the biggest opportunities lie in each sector and then outlining the core enablers to be tackled first.

**CCP economic decline leads to multiple scenarios for war**

**Carpenter, 15** [Ted Galen, a senior fellow at the Cato Institute and a contributing editor at The National Interest, The National Interest, “Could China's Economic Troubles Spark a War?”, 9/6/15, <http://nationalinterest.org/feature/could-chinas-economic-troubles-spark-war-13784?page=2>, 6/24/16]JRO

Global attention has focused on the plunge in the Shanghai stock market and mounting evidence that China’s economic growth is slowing dramatically. Moreover, the contagion appears to be spreading, characterized by extreme volatility and alarming declines in America’s own equity markets. Those worries are compounded because there always have been doubts about the accuracy of Beijing’s official economic statistics. Even before the current downturn, some outside experts believed that Chinese officials padded the results, making the country’s performance appear stronger than it actually was. If China is now teetering on the brink of recession, the political incentives for officials to conceal the extent of the damage would be quite powerful. The focus on the possible wider economic consequences of a severe Chinese economic slowdown is understandable, since the ramifications could be extremely unpleasant for the U.S. and global economies. But we should also be vigilant about how such economic stress might affect Beijing’s diplomatic and military behavior. It is not unprecedented for a government that feels besieged to attempt to distract a discontented public by fomenting a foreign policy crisis. In Henry IV, Shakespeare pithily described that process as the temptation to “busy giddy minds with foreign quarrels.” China’s leaders likely feel increasingly uncomfortable. The implicit bargain that has been in place since the onset of market-oriented reforms in the late 1970s has been that if the public does not challenge the Communist Party’s dominant political position, the Party will deliver an ever-rising standard of living for the people. The bloody Tiananmen Square crackdown in 1989 was a graphic reminder of what happens if the Party’s position is challenged. However, until now, the economic portion of the bargain seemed secure, characterized by breathtaking, often double digit, rates of growth. It is uncertain what happens if the Party can no longer maintain its part of the implicit bargain, but it is likely that a dangerous degree of public discontent will surface. Beijing might refrain from deliberately provoking a major foreign policy crisis, since the Chinese economy depends heavily on export markets, and access to those markets would be jeopardized by war. However, the **need to preserve and strengthen national unity and distract the public** from mounting economic troubles is likely to impel Chinese leaders to adopt very hardline policies in at least three areas. And all of those situations entail the danger of miscalculations that could lead to war. One issue is the South China Sea. Beijing has made extraordinarily broad territorial claims that encompass some 90 percent of that body of water. China is pressing its claims with air and naval patrols and the building of artificial islands. Those policies have brought Beijing into acrimonious disputes with neighbors such as Vietnam and the Philippines, which have rival territorial claims, and with the world’s leading maritime power, the United States, which resists any manifestation of Chinese control over the South China Sea and the crucial commercial lanes that pass through it. The conditions are in place for a nasty confrontation. Chinese leaders have already stressed the country’s alleged historical claims to the area, and made it clear that it will not tolerate being subjected to humiliation by outside powers. Such arguments are designed to gain domestic support by reminding the Chinese people of the country’s long period of weakness and humiliation in the 1800s and early 1900s. A second issue is Taiwan. Beijing has long argued that Taiwan is rightfully part of China and was stolen from the country in the Sino-Japanese war in 1895. Although Chinese leaders have exhibited patience regarding the issue of reunification, relying in large measure on growing cross-strait economic ties to entice Taiwan to eventually accept that outcome, Beijing has also reacted very sharply whenever Taiwanese officials have pushed an agenda of independence, as during the administration of Chen Shui-bian from 2000 to 2008. The danger or renewed confrontation is rising, since public opinion polls indicate that the nominee of Chen’s old party, the pro-independence Democratic Progressive Party, will be Taiwan’s next leader. A new crisis in the Taiwan Strait would be extremely serious, since the United States has obligated itself to consider any Chinese efforts at coercion as a “grave breach of the peace” of East Asia. Yet there is little doubt that there would be widespread domestic support on the mainland for a stern response by the Beijing government to a Taiwanese attempt to enhance its de-facto independence. Indeed, there might be more political danger to the regime if it did not take a strong stance on that issue. The third possible arena for crisis is the East China Sea. China is increasingly adamant about its claims to the Diaoyu/Senkaku islands, which are under Japanese control. From China’s perspective, those islands were stolen by Imperial Japan at the same time that Tokyo took possession of Taiwan following the 1895 war. And ginning up public anger against Japan is never difficult. China just finished celebrating the 70th anniversary of the end of World War II, which is touted in China as “the Chinese People’s War of Resistance Against Japanese Aggression and the World Anti-Fascist War.” Recalling Japan’s invasion of China, and the resulting atrocities, was a prominent theme of the various commemorative events. But the animosity is not based solely on historical grievances. Anger at Japan over the ongoing East China Sea dispute and other matters has already produced anti-Japanese riots in Chinese cities, characterized by attacks on Japanese businesses and automobiles. There is a powerful incentive for Chinese leaders to take an uncompromising stance on the Diaoyu/Senkaku feud, confident that the Chinese people will back such a stance. All of this suggests that the United States and its allies need to proceed cautiously about dealing with China, especially on these three issues. Now is not the time to press a Chinese leadership that likely feels beleaguered by the country’s economic woes. The last thing we should do is give those leaders further temptation to distract the Chinese people with a foreign policy confrontation. Such a strategy entails the grave risk of miscalculation and escalation, and that would be a tragedy for all concerned.

**2nc – Democracy EXT**

#### US-led AI destroys democracy, creates a fascist system—rise of far right groups in the US intensify

Ünver 18 – Dr. Unver is a member of the Carnegie Endowment for International Peace Digital Democracy Network, which is a global scientific community of leading scholars of technology and politics. Previously, he served as a social science fellow at Britain's national data science laboratory Alan Turing Institute, Oxford University's Center for Technology and Global Affairs, social sciences mentor at Oxford University's Cyber Security Doctoral Training Program, Jean-Monnet fellow at the University of Michigan, and the Ertegun Chair of Middle Eastern Studies at Princeton University. Prof. Ünver is the coordinator and director of the Summer Institute in Computational Social Science (SICSS) Istanbul, the oldest and longest-running social data science summer training program in Turkey.. He holds a Ph.D. in International Relations from the University of Essex and is currently a Governing Council Member of the International Studies Association (ISA). (Ünver, H. Akın. Artificial Intelligence, Authoritarianism and the Future of Political Systems. Centre for Economics and Foreign Policy Studies, 2018. JSTOR, http://www.jstor.org/stable/resrep26084. Accessed 13 Jul. 2022.)

The most immediate impact of A.I. that might reinforce the feudalistic tendencies of the digital space is to create a production system mimicking corporatism - namely, the reconfiguration of power relations through sectoral alliances between coder syndicates and guilds. This would entail the control of algorithm-building and maintaining structures that both state and private actors rely on, and the foundation of the future economic system. The corporatization of A.I. could reinforce power-centralization through the combination of corporations that monopolize modes of code and coder production that will disproportionately influence politics, military and science affairs. This will effectively generate a feudal network that minimizes political participation and representation, leading to the eradication of democracy. The Habermasian ‘algorithmic enclosures’ that are obscure and inaccessible will establish robust control mechanisms on the society and in turn, empower coder oligarchies and corporations in charge of them. The second alarmist trend in the popular mainstream is the idea that the A.I. will create a ‘fascist system’28 Cyber Governance and Digital Democracy 2018/9 over-centralized A.I.-based decision-making will create a hierarchy of repression in which control-oriented, top-down practices will restrict expression, engagement, oversight and political information-seeking behavior. These fears have been intensified with the rise of the far-right groups in the US and Europe in the last years, bolstered by Internet trolls, fake news, and bots. According to the conceptualization of Foucault29 and Canguilhem30, the way technology and science are deployed by fascist regimes snowball into a social force, bursting their initial utilitarian origins and take on a life of their own. Technologism then determines the bounds of rights and freedoms in a society, becoming the real political ideology in fascist regimes. In ‘techno-fascism,’ all aspects of social life are controlled with the purpose of maximizing scientific progress and technological advances that are in turn, used to exert newer forms of sectoral control over social life. Views that don’t conform or fully converge to the hegemonic ideology are taken out of the equation through imprisonment and death. Totalitarianism is different from authoritarianism in this context since the latter denotes the centralization of political power without the need to control thoughts and actions of all citizens through a revolutionary mechanism to change the human nature or the world at whole. An ‘A.I. fascism’ or totalitarianism, therefore, has to entail a bid to change human relations and social interactions; merely political control and centralization are not enough on their own

#### US is the ultimate double standard with cybersecurity – violating democracy, power balance and privacy

**Blunden and Cheung 14** (Bill Blunden, independent investigator, Violet Cheung, professor of psychology at the University of San Francisco, “Behold a Pale Farce”, Trine Day, ProQuest, April 17, 2014)//SW

NSA has been coming out with all these charges against China going after our secrets, our information, and so forth. It’s caused the Congress to give enormous amounts of money to NSA, this money for defensive use against the Chinese and so forth. What never comes out is the U.S. offensive capability against the rest of the world. The U.S. – there’s nobody that can even compare to the U.S. We’ve got an enormous Cyber Command. They’re expanding NSA’s secret city by a third to accommodate 14 new buildings, 10 parking garages, a new enormous supercomputer center – all this for this new, very secret **Cyber Command. And it’s dedicated largely to offensive, to creating wars**, not preventing wars. 21 Our leaders tend to paint the United States as being an innocent victim. However, more often than not the **United States is a perpetrator**. As the documents leaked by Ed Snowden confirmed, the focus of CYBERCOM isn’t on deterring attacks**, it’s about launching them**. In many instances these attacks are launched to **acquire a strategic economic advantage and impose U.S. dominion abroad**. In the end, it’s probably safe to assume that everyone is spying on everyone else. They always have and probably always will. Though at the same time, it’s also important to recognize that not all espionage programs are the same, and that scale matters. Given the amount of tax money our leaders throw at it, the United States, with its army of private sector contractors, **steals secrets on a level both domestically and internationally that is unsurpassed**. When it comes to breaking into networks and collecting sensitive information the United States is admittedly in a class all by itself. Journalist Glenn Greenwald elaborates on the repercussions of this fact: That the U.S. government – in complete secrecy – is constructing a **ubiquitous spying apparatus aimed not only at its own citizens, but all of the world’s citizens**, has profound consequences. It erodes, if not eliminates, the ability to use the Internet with any remnant of privacy or personal security. It vests the U.S. government with boundless power over those to whom it has no accountability. It permits allies of the U.S. – including aggressively oppressive ones – to **benefit from indiscriminate spying on their citizens’ communications. It radically alters the balance of power between the U.S. and ordinary citizens of the world.** And it sends an unmistakable signal to the world that while the U.S. very minimally values the privacy rights of Americans, it assigns zero value to the privacy of everyone else on the planet. 22 This double standard has serious consequences. It illustrates that U.S**. leaders are unwilling to adhere to the values** and principles that they claim to represent. Whistleblowers have exposed our political elite as untrustworthy. Having lost its moral authority in this domain, the United States cannot hope to name and shame cyber offenders. The ethereal bindings of soft power have dissolved, leaving only a **dangerous example that other nations can follow**.

#### American AI is unethical – they’ll establish a terrible global norm

**Snider ’20** (Technology reporer of USA Today, “Clearview AI, which has facial recognition database of 3 billion images, faces data theft,” USA Today, 2/26/29) https://www.usatoday.com/story/tech/2020/02/26/clearview-ai-data-theft-stokes-privacy-concerns-facial-recognition/4883352002/

Facial recognition software firm Clearview AI, which has been criticized for scraping together a database of as many as 3 billion online images, has been hit with a data breach. The firm, based in New York, apparently saw its list of customers, which includes numerous law enforcement agencies, stolen, [according to The Daily Beast](https://www.thedailybeast.com/clearview-ai-facial-recognition-company-that-works-with-law-enforcement-says-entire-client-list-was-stolen), which first reported the incident. The news site reported that it had obtained a notice sent to Clearview's customers that an intruder had “gained unauthorized access” to its customer list, the number of searches customers have conducted and other data. Clearview said in the notice that the company’s servers were not breached and that there was “no compromise of Clearview’s systems or network.” However, Clearview's attorney, Tor Ekeland, said in a statement sent to USA TODAY, "Security is Clearview's top priority. Unfortunately, data breaches are part of life in the 21st century. Our servers were never accessed. We patched the flaw, and continue to work to strengthen our security." Facial recognition spurs privacy concerns: The issue of facial recognition technology and privacy has been controversial lately. Student uproar over [the potential implementation of the face-scanning technology at the University of California Los Angeles led the school to drop the plan](https://www.usatoday.com/story/tech/2020/02/19/ucla-drops-face-recognition-plan/4810648002/). An editorial in [The Daily Bruin](https://dailybruin.com/) student newspaper described the plan as "a major breach of students’ privacy" that makes "students feel unsafe on a campus they are supposed to call home." Clearview attracted attention after [The New York Times reported in January](https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html) that the startup had built a database of more than 3 billion images gathered from social media sites such as Facebook, YouTube, as well as payment site Venmo and other online destinations. The company notes on [its website](https://clearview.ai/) that it searches the open web – not private social media accounts – and markets its investigative tool only to law enforcement agencies and "is NOT available to the public." Federal and state law enforcement officials told The Times that they had used Clearview's app in solving cases from shoplifting to murder and child sexual exploitation cases. Clearview was founded by Australian technologist Hoan Ton-That and Richard Schwartz, an aide to then-New York Mayor Rudy Giuliani, the Times reported, and counts Silicon Valley venture capitalist Peter Thiel among its investors. Clearview faces criticism: Since the report's publication, Google, Facebook, Twitter and Venmo [have sent cease-and-desist letters to Clearview](https://apnews.com/4a8ca0d22c503ea241cf5e220384fe37) demanding the company stop using its platforms for gathering imagery. “YouTube’s Terms of Service explicitly forbid collecting data that can be used to identify a person,” YouTube spokesman Alex Joseph said in a statement. “Clearview has publicly admitted to doing exactly that, and in response we sent them a cease and desist letter.” The New Jersey attorney general has banned police from using Clearview's app, [The Times reported](https://www.nytimes.com/2020/01/24/technology/clearview-ai-new-jersey.html), and the company also faces class action lawsuits in Illinois and Virginia. And Clearview is coming under scrutiny by some in the U.S. Congress. Rep. Patrick McHenry, R-N.C., has called for House Financial Services Committee chair Maxine Waters, D-Calif., to schedule a hearing on the company's data collection practices, [Axios reported](https://www.axios.com/rep-patrick-mchenry-clearview-data-8fe83d4a-455f-4a97-86cf-da1330ac1d23.html). Sen. Edward Markey, D-Mass., who last month expressed concerns about Clearview's technology, strengthened his unease after Wednesday's report: "Clearview’s statement that security is its ‘top priority’ would be laughable if the company’s failure to safeguard its information wasn’t so disturbing and threatening to the public’s privacy,” he said in a statement. While the company said it had not been hacked, the incident raises concerns, he says. “If your password gets breached, you can change your password. If your credit card number gets breached, you can cancel your card. But you can’t change biometric information like your facial characteristics if a company like Clearview fails to keep that data secure," Markey said. "This is a company whose entire business model relies on collecting incredibly sensitive and personal information, and this breach is yet another sign that the potential benefits of Clearview’s technology do not outweigh the grave privacy risks it poses.”

#### American tech companies are selling, manipulating, and stealing consumer data

**Beens ’21** (Robert E.G**.** Beens is Co-Founder and CEO of [Startpage](https://www.startpage.com/), the world’s most private search engine, “[Companies are selling, manipulating, or stealing data. It’s time to do something about it](https://www.fastcompany.com/90597583/data-privacy-startpage-founder),” Fast Company, 1/28/21) https://www.fastcompany.com/90597583/data-privacy-startpage-founder

There is a curious trend afoot these days. As profits among tech’s biggest players have risen, so too have [the number of breaches and hacks](https://www.statista.com/statistics/273550/data-breaches-recorded-in-the-united-states-by-number-of-breaches-and-records-exposed/). Their trajectories nearly mirror each other: up, and to the right. This is no coincidence, of course. User data, that digital treasure craved by hackers and businesses alike, is wildly lucrative. Big tech is using our data in privacy-invasive ways to source targeted ads, [selling precise user profiles to advertisers at exorbitant rates](https://www.fastcompany.com/90310803/here-are-the-data-brokers-quietly-buying-and-selling-your-personal-information) in a way that allows them [to discriminate against users](https://www.nytimes.com/2019/03/28/us/politics/facebook-housing-discrimination.html) based on where they live or who they are. In addition, companies are using our images to [train biased facial recognition systems](https://www.nytimes.com/2019/12/19/technology/facial-recognition-bias.html#:~:text=Algorithms%20falsely%20identified%20African%2DAmerican,of%20Standards%20and%20Technology%20found.), which tie into predictive policing and can unjustly put people in jail. For hackers, data can be held ransom or manipulated for financial gain. For users? These days most of our online data is sold, manipulated, stolen, or in many cases all of the above. Often we’re left with annoying ads that follow us around or worse, our data exposed on the open web or used in malicious ways without our approval. There certainly aren’t any profits coming our way. In this all-digital age, we often forget all that data is actually ours. This precious online data—banking information, photos, what we search for, what we buy—is created by and unique to each of us. Without us online, this entire ecosystem does not exist. Big Tech’s profits would tumble, as would the number of data breaches. It’s concerning then that we users hold the keys to a door we can’t truly access. This is the terrifying state of online privacy in 2021. We’re at a tipping point in history. Waiting for foolproof legislation or big tech companies to suddenly have a change of heart will not work. Meanwhile, hacks, breaches, and rampant misuse of our data are reaching catastrophic levels. We have a decision to make: We can either take collective action to regain control of our online privacy, or we can continue down our current path of least resistance and lose it for good. The cascade of events that have led to this privacy tipping point stretches back millennia. Before the development of modern technology, the original privacy violators were largely governments and politicians. In ancient Rome, top political players built their own surveillance networks of cohorts that would alert them to the schemes of their rivals. In the Middle Ages, the Roman Catholic Church had its own powerful surveillance network to track and crack down on hearsay. In the late 18th century, the French Revolution saw half a million French nobles targeted by the new government’s “committees of surveillance,” who arrested those considered suspicious. And in the 1930s, IBM, perhaps the first “big tech” company, helped facilitate the Nazis’ genocide through the generation and tabulation of punch cards on national census data. The dawn of the digital age in the 1990s saw the swift rise of tech companies whose shiny new offerings came at a hefty price: our data. In contrast to the authoritarian surveillance practices employed by history’s governments, tech companies originally positioned their relationship with users as mutually beneficial. Their products and services were mostly free, which users gobbled up, which quickly led to the massive growth and user bases tech companies craved. We didn’t think too much about it. But what appeared to be a genuine and transparent relationship with Big Tech turned out to be anything but. A decade or so later we would learn that we’d been paying them since day one with our behavioral data—lucrative information about how we move around the internet and interact with digital services—and had already lost our privacy. The price we pay for their wares is not in dollars and cents, but in our data, our privacy, and our freedom, sold by Big Tech to the highest ad bidder. Big Tech has thus asked more and more from users over the years, and most of us have been giving them our most valuable currency (our data) with little or no thought. We [don’t read privacy policies](https://www.usatoday.com/story/tech/2020/01/28/not-reading-the-small-print-is-privacy-policy-fail/4565274002/), we fail to use the [myriad privacy tools](https://www.privacytools.io/) on the market, and the [most common password](https://nordpass.com/most-common-passwords-list/) we use to protect ourselves is most often varying lengths of the numbers 1 through 10. The result: Far too much of our personal data sits outside of our control and in the hands of those who sell it, manipulate it, or steal it for profit. Consumers, you must take matters into your own hands. Legislation and hoping for a change of heart will not tip online privacy rights back into your favor. Neither will sitting idly by, either unmotivated or unaware of the assault taking place every second we’re online. We are at a critical tipping point in time. We know what happens with our data, we know the consequences, and we have the resources and tools to wrest back control of what is rightfully ours. In this most critical year, we can take two paths: One is easy and familiar but devastatingly costly. The other is harder but leads to true freedom and choice.

**2nc – CCP Collapse ! EXT**

**CCP diversionary war goes nuclear**

Polina **Tikhonova 15**, Russia expert at ValueWalk, citing Zhang Baohui, Prof @ Political Science and Director of the Centre for Asian Pacific Studies @ Lingnan, “US Faces Nuclear War Threat Over South China Sea – Chinese Professor,” 11/28, http://www.valuewalk.com/2015/11/us-nuclear-war-south-china-sea/

China is willing to start a **nuclear war** with the United States over the **S**outh **C**hina **S**ea, according to a Chinese professor.¶ Beijing’s rhetoric after an incident with a U.S. warship sailed to the South China Sea suggests that Chinese decision-makers could resort to more “concrete and forceful measures” to counter the U.S. Navy, according to Zhang Baohui, Professor of Political Science and Director of the Centre for Asian Pacific Studies at Lingnan University in Hong Kong.¶ “If so, a face-off between the two navies becomes **inevitable**. Even worse, the face-off may trigger an **escalation towards military conflicts**,” the professor wrote in a piece for RSIS Commentary.¶ But, according to Baohui, the U.S. military is “oblivious” to this scenario, since Washington decision-makers think America’s conventional military superiority discourages China from responding to such “provocations” in the South China Sea militarily. However, **this** “U.S. expectation **is flawed**, as China is a major nuclear power,” the professor wrote.¶ “When **cornered**, nuclear-armed states can threaten **asymmetric escalation** to deter an adversary from harming its key interests,” he added.¶ Baohui then refers to the military parade in Beijing that took place on Sept. 3 and revealed that China’s new generation of tactical missiles – such as the DF-26 – are capable of being armed with nuclear warheads. Moreover, according to the latest reports, China’s air-launched long-range cruise missiles can also carry tactical nuclear warheads.¶ U.S. could provoke nuclear war with China¶ And while the U.S. does not have its core interests in the South China Sea, the disputed islands present China’s **strategic interests**, which is why this kind of **asymmetry in stakes** would certainly give Beijing an **advantage in** “the balance of **resolve**” over Washington, according to the professor. And if the South China Sea situation escalates and starts spiraling into a nuclear confrontation between the U.S. and China, Washington will face a choice of either backing down first or fighting a nuclear-armed power and the world’s largest military force with a strength of approximately 2.285 million personnel.¶ “Neither option is attractive and both exact high costs, either in reputation or human lives, for the U.S.,” Baohui wrote.¶ So it would be unwise for the U.S. to **further provoke China** in the disputed area, since China’s willingness to defend its interests, reputation and deterrence credibility could **easily escalate** the conflict **into a military confrontation** that would ultimately harm U.S. interests, according to the professor.¶ China will join Russia in nuclear war with NATO¶ With NATO member state Turkey downing a Russian jet in its airspace, there is already a high risk of military confrontation in the world. And with China being so close and allied with Russia, Beijing decision-makers could see the incident with the Russian warplane as an opportunity to avenge the West for the South China Sea provocations.

**2nc – Food Security !**

#### Chinese tech increases food security.

Kirana **Aisyah 21**, Kirana is a content producer at Opengovasia and specializes in AI, cyber, IoT, tech, and more. She has a Bachelor’s degree at the University of Indonesia, 10-4-2021, “Technology to Ensure Food Security in China,” <https://opengovasia.com/technology-to-ensure-food-security-in-china/>, oj

According to the Chinese Academy of Agricultural Sciences (CAAS), China will improve efforts to create **higher yields** and **higher quality** production of major food crop varieties, and **self-sufficiency** in major livestock and poultry varieties by 2030 by **deploying technology**. China released an action plan to promote the national seed industry late last month in Sanya, South China’s Hainan province, where the Nanfan Scientific and Research Breeding Base is located. The plan lays out the necessary theoretical, scientific and **technologica**l developments for the industry to improve seed varieties and grain yields, and ensure the protection of national germ plasm resources. Since the beginning of the 13th Five-Year Plan (2016-2020), China’s ability to innovate in breeding technology has continued to rise. However, China is still in the process of developing breeding theories and key technologies. Yields of corn and soybeans have not reached those of developed countries, while the availability of some vegetable seeds remains dependent on imports. The need to become self-reliant in terms of science and innovation-driven technology is urgent. – Zhang Hecheng, CAAS official In recent years, CAAS has made **significant breakthroughs** in key technologies including genome-wide selection, ploidy breeding (a process useful in plant breeding), and genetically modified organisms, which has laid a solid foundation for future research. China will introduce 50 major tasks focused on key crop and livestock varieties, and three specific actions involving innovative research, seed enterprises and the creation of a science and technology platform. China will strive to achieve high-yield, high-quality self-sufficiency in food crop varieties by 2030, and ensure the **absolute security** of the country’s rice and wheat. By 2030, the self-sufficiency rate of vegetable varieties, such as broccoli, carrots and spinach, will rise from the current 10% to more than **50%**. Moreover, a platform will be built to boost seed industry technology, integrating basic research, technological innovation, variety creation, big data, and industry incubation. China will reinforce the underpinning role of **science and technology** in agricultural production. In light of the national conditions and people’s needs, science-based and result-oriented efforts will be made to shore up the areas of weakness. Mechanisms will be improved to fully mobilise market forces and promote collaboration on innovation between research institutes and universities, and enterprises and farmers. A sound commercial breeding system will be established, and enterprises in the seed industry will be nurtured and expanded. The research, development and extensive application of practical and efficient farming machinery and equipment will be supported. Quality and efficiency in the agricultural sector will be promoted through technological innovation. As reported by OpenGov Asia, digital technology is bound to play a bigger role in the country’s steps toward rural vitalisation and agricultural modernisation. The digitalisation of rural industries is key to developing the countryside, and it is a new driver of a sustainable rural economy. Integrating new technology like big data, Artificial Intelligence (AI) and the Internet of Things (IoT) with crop and livestock production will be central to developing **smart agriculture**. The involvement of digital technologies across the supply chain will help increase efficiency while reducing costs. The push toward digital agriculture is the result of a plan released in January last year aimed at improving smart agriculture and providing support for rural vitalisation in the years leading up to 2025. Jointly released by the Ministry of Agriculture and Rural Affairs and the Cyberspace Administration of China, the plan proposed building a basic data system for rural areas to facilitate targeted management and services. The plan highlighted research into and the use of intelligent agricultural machinery as well as the development of smart agriculture based on the internet of things, sensors, location systems, and robots.

#### Food shortages cause China to escalate towards Taiwan.

**Chaudhury 20**, Dipanjan Roy Chaudhury covers Foreign Affairs .A US State Department IVLP fellow in 2015, Dipanjan has been on fellowships to Germany and Taiwan, 9-26-20, “Food shortages in China might push Xi Jinping to take drastic actions against Taiwan and elsewhere,” <https://economictimes.indiatimes.com/news/international/world-news/food-shortages-in-china-might-push-xi-jinping-to-take-drastic-actions-against-taiwan-elsewhere/articleshow/78329138.cms>, oj

NEW DELHI: China is believed to be on the brink of a **major food shortage**, which might trigger a strategic contest over food security and push Chinese President Xi Jinping already under intense pressure, toward drastic measures, potentially spelling trouble for Taiwan and other parts of the world. China has encountered a **perfect storm of disasters** this year. On top of disruption due to the COVID-19 pandemic, torrential rains have caused catastrophic flooding in the Yangtze River basin, China’s largest agricultural region. Floodwaters are estimated to have already destroyed the crops on 6 million hectares of farmland, according to an editorial in The Taipei Times. The situation has been further compounded by plagues of locusts and fall armyworm infestations in other regions, where fields have been stripped bare, and three huge typhoons last month making landfall in northeastern China, the editorial alleged. Food prices increased **13 percent** in July, with pork prices rising by an eye-watering 85 percent, Chinese government data showed. There are reports of farmers hoarding crops, expecting even higher prices. After initially trumpeting “bumper harvests,” Chinese state media have switched from cover-up to behavior control, touting a national “Clean your plate” campaign on food wastage, according to the editorial. Last month, Xi called on the Chinese public to “cultivate thrifty habits, and foster a social environment where waste is shameful and thriftiness is applaudable.” “The propaganda has shades of Mao Zedong’s call for Chinese citizens to eat only two meals a day at the onset of the Great Famine of 1959 to 1961,” the editorial pointed out. “All the signs point to a significant fall in domestic agricultural output, and it is uncertain whether China will be able to plug the gap with imports, while also keeping a lid on soaring prices.” “Food shortages look to be more than just a short-term blip. As China has become more affluent, diets — and waistlines — have expanded, putting a strain on supply and demand. The Chinese Academy of Social Sciences estimates that China’s domestic supply of rice, wheat and corn will fall short of demand by 25 million tonnes by the end of 2025. This raises the question, how can China feed its 1.4 billion people in the long term?,” the editorial quipped. “If there is a serious food shortage, which requires rationing, or even a famine, Xi would need the **mother of all distractions** — and a small border war with India probably would not cut it,” The Taipei Times alleged. “Chinese military aircraft are on an almost daily basis probing Taiwan’s air defense identification zone. Xi might be trying to goad Taiwan into a first strike. A significant danger point for Taiwan is the US presidential election in November. Due to the extreme polarization of US politics, the result is likely to be bitterly contested.” If the US is thrown into chaos with a protracted court battle to settle the election’s outcome, Xi could view this as a once-in-a-generation opportunity to solve the “Taiwan problem.” With mass protests after the election, the US might in Beijing’s eyes appear historically weak, even on the brink of a civil war, alleged the editorial. The US has of course been there before during the mid-1960s and recovered — but there is a real possibility of a miscalculation on Xi’s part. To top it off, there is a big date coming up: July 31 next year marks the centenary of the founding of the Chinese Communist Party. With Xi under scrutiny at home for myriad policy failures, he will need something to show for it — and the clock is ticking, according to Taipei Times.

#### US will defend Taiwan because of strategic interests---causes great power war

Benner 22, co-founder and director of the Global Public Policy Institute (GPPi) in Berlin. His areas of interest include international organizations (focusing on the United Nations), peace and security, data and technology politics, and the interplay of the US, Europe and non-Western powers in the making of global (dis)order. Prior to co-founding GPPi in 2003, he worked with the German Council on Foreign Relations in Berlin, the UN Development Programme in New York, and the Global Public Policy Project in Washington, DC. (Thorsten, “Peace Through Deterrence: Why Germany and Europe Need to Invest More to Preserve the Status Quo in the Taiwan Strait,” Internationale Politik Quarterly, <https://gppi.net/2022/03/16/peace-through-deterrence)//BB>

Why the US Will Defend Taiwan

Some critics claim that the US’ messy withdrawal from Afghanistan has only fueled Beijing’s desire to conquer Taiwan because of nagging doubts about Washington’s determination to defend allies. Brussels-based journalist Stuart Lau, for instance, wrote on Twitter: ​“Imagine Beijing watching the US military ​‘commitment’ in Afghanistan while contemplating its next move on Taiwan.” This is a misguided analogy. For one, Beijing understands that Washington chose to withdraw from Afghanistan to free up political and military resources to deal with China. Moreover, Taiwan is strategically much more important to the US than Afghanistan. The island is a like-minded democracy and an important economic partner (particularly in semiconductor technology sector, where Taiwan is world leader). But above all, Taiwan is crucial as a strategic location for the US in the region. At a hearing of the US Senate in December 2021, Ely Ratner – assistant secretary of defense for the Indo-Pacific in the Biden administration – clearly cited Taiwan’s location as a central motivation for his government’s commitment to supporting Taiwan: ​“Taiwan is located at a critical node within the first island chain, anchoring a network of US allies and partners — stretching from the Japanese archipelago down to the Philippines and into the South China Sea — that is critical to the region’s security and critical to the defense of vital US interests in the Indo-Pacific. Geographically, Taiwan is also situated alongside major trade lanes that provide sea lines of communication for much of the world’s commerce and energy shipping.” If Beijing brings Taiwan under its control, the entire military balance in the Western Pacific will change. So far, as Bruce Jones very clearly states in his book To Rule the Waves, China has been severely restricted by the fact that the first island chain off its coast is comprised of US allies: Japan, Taiwan and the Philippines. If China controlled Taiwan, it would break through the first island chain and gain much freer access to the Western Pacific at large. As Jones writes: ​“China would suddenly gain naval bases beyond the first island chain. The southern coast of Japan would be much more vulnerable to the Chinese PLAN and American defenses in the rest of the Western Pacific more exposed to Chinese power.” It is precisely because the strategic consequences are so dramatic that we should assume that the US (alongside allies such as Australia and Japan, which have both indicated possible military support) is prepared to defend Taiwan militarily – and that this would lead to a great power war. Unless someone who is an advocate of radical retrenchment assumes the US presidency, this scenario would likely hold true in the foreseeable future and under both Republican and Democrat administrations.

### 2nc – Disease !

#### China’s AI is future of R&D leading the globe, aiding in healthcare, and spurring economic growth

**Shen et al ’22** (Responsible for 4x China Analytics practice to ~100 data scientists, developers and business translators in ~2 years, “The next frontier for AI in China could add $600 billion to its economy,” QuantumBlack AI by McKinsey, 6/7/22) https://www.mckinsey.com/business-functions/quantumblack/our-insights/the-next-frontier-for-ai-in-china-could-add-600-billion-to-its-economy

Healthcare and life sciences: In recent years, China has stepped up its investment in innovation in healthcare and life sciences with AI. China’s “14th Five-Year Plan” targets 7 percent annual growth by 2025 for R&D expenditure, of which at least 8 percent is devoted to basic research. 13 One area of focus is accelerating drug discovery and increasing the odds of success, which is a significant global issue. In 2021, global pharma R&D spend reached $212 billion, compared with $137 billion in 2012, with an approximately 5 percent compound annual growth rate (CAGR). Drug discovery takes 5.5 years on average, which not only delays patients’ access to innovative therapeutics but also shortens the patent protection period that rewards innovation. Despite improved success rates for new-drug development, only the top 20 percent of pharmaceutical companies worldwide realized a breakeven on their R&D investments after seven years. Another top priority is improving patient care, and Chinese AI start-ups today are working to build the country’s reputation for providing more accurate and reliable healthcare in terms of diagnostic outcomes and clinical decisions. Our research suggests that AI in R&D could add more than $25 billion in economic value in three specific areas: faster drug discovery, clinical-trial optimization, and clinical-decision support. Rapid drug discovery. Novel drugs (patented prescription drugs) currently account for less than 30 percent of the total market size in China (compared with more than 70 percent globally), indicating a significant opportunity from introducing novel drugs empowered by AI in discovery. We estimate that using AI to accelerate target identification and novel molecules design could contribute up to $10 billion in value. 14 Already more than 20 AI start-ups in China funded by private-equity firms or local hyperscalers are collaborating with traditional pharmaceutical companies or independently working to develop novel therapeutics. Insilico Medicine, by using an end-to-end generative AI engine for target identification, molecule design, and lead optimization, discovered a preclinical candidate for pulmonary fibrosis in less than 18 months at a cost of under $3 million. This represented a significant reduction from the average timeline of six years and an average cost of more than $18 million from target discovery to preclinical candidate. This antifibrotic drug candidate has now successfully completed a Phase 0 clinical study and entered a Phase I clinical trial. Clinical-trial optimization. Our research suggests that another $10 billion in economic value could result from optimizing clinical-study designs (process, protocols, sites), optimizing trial delivery and execution (hybrid trial-delivery model), and generating real-world evidence. 15 These AI use cases can reduce the time and cost of clinical-trial development, provide a better experience for patients and healthcare professionals, and enable higher quality and compliance. For instance, a global top 20 pharmaceutical company leveraged AI in combination with process improvements to reduce the clinical-trial enrollment timeline by 13 percent and save 10 to 15 percent in external costs. The global pharmaceutical company prioritized three areas for its tech-enabled clinical-trial development. To accelerate trial design and operational planning, it utilized the power of both internal and external data for optimizing protocol design and site selection. For streamlining site and patient engagement, it established an ecosystem with API standards to leverage internal and external innovations. To establish a clinical-trial development cockpit, it aggregated and visualized operational trial data to enable end-to-end clinical-trial operations with full transparency so it could predict potential risks and trial delays and proactively take action. The future of AI in China: Clinical-decision support. Our findings indicate that the use of machine learning algorithms on medical images and data (including examination results and symptom reports) to predict diagnostic outcomes and support clinical decisions could generate around $5 billion in economic value. 16 A leading AI start-up in medical imaging now applies computer vision and machine learning algorithms on optical coherence tomography results from retinal images. It automatically searches and identifies the signs of dozens of chronic illnesses and conditions, such as diabetes, hypertension, and arteriosclerosis, expediting the diagnosis process and increasing early detection of disease.

#### Combining with the new 5G, China’s AI has the potential to lead in healthcare – solves disease and aging crisis – promotes quality of life

Ye 21 (Sally Ye, health care technology analyst at the Healthcare Technology division of Omdia, 10-18-2021, "China's medical Artificial Intelligence market continues to grow," Omnia Health Insights, https://insights.omnia-health.com/artificial-intelligence/chinas-medical-artificial-intelligence-market-continues-grow)

On September 22nd, Airdoc Technology, a fast-growing start-up offering an AI-driven system that takes and analyses photographic images of the retina, passed listing hearing which means it is going to be the first public-listed medical AI company in China.

Shukun Tech, another AI-focused start-up focusing on assisting cardiovascular disease diagnosis, filed for IPO on September 21st, joining the growing list of Chinese medical AI companies going public this year.

China health systems are facing significant challenges to meet drastically growing medical demand driven by an aging population and growing patient expectation alongside constrained medical resources. Lack of high-quality healthcare professionals is another pain point.  
  
The [average misdiagnosis rate in China stands at 30%](http://en.people.cn/english/200105/14/eng20010514_69889.html), and can be as high as 40% for difficult and complicated cases, especially at more basic medical facilities. The application of AI can alleviate daily administrative tasks for healthcare professionals and support them in clinical decisions, improving the patient outcome. All these factors provide an opportunity for AI application in China healthcare.

In July 2017, The State Council of China released the [New Generation Artificial Intelligence Development Plan](http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm). This policy outlines China's strategy to build an AI industry worth more than 62 billion US dollars, driving related industry value worth more than 774 billion US dollars by 2025.  
  
It aims to make China the leading AI power by 2030. Smart healthcare is one of five key AI-based applications alongside smart manufacturing, smart city, smart agriculture, and smart national defense. The “Internet + Healthcare” Initiative (launched in 2018) aims to further drive the digital transformation of China’s healthcare systems.

In January 2020, China FDA granted the first AI medical device license which represented a milestone of medical AI commercialization. Medical AI is applied in a multitude of areas including imaging, drug development, auxiliary diagnostics, and health management.   
  
The Omdia Healthcare Equipment Database estimates that China is the second biggest medical imaging market in the world (5.72 billion US dollars in 2020). For ultrasound, MRI and CT, it ranks as the top market globally. Currently, imaging is the most common application of medical AI in China. Omdia currently estimates that there are around 150 Chinese medical AI providers, with more than 40% of them focusing on medical imaging.   
  
At the time of writing, there are more than a dozen AI medical imaging software companies which have been granted a Class III medical device license to support clinical decisions.

In September 2021, Tencent obtained a Class III medical device license for its pneumonia CT imaging software to support triage and assessment, becoming the first internet company in China to obtain a Class III AI medical license. (When software is used to support clinical decisions, it is classified as Class III medical device. For non-clinical decision support purposes, such as data collection and processing, the software is classified as Class II medical device.)  
  
The upgrading of technology infrastructure in China will also support AI adoption. Of all the 5G base stations globally, 59% of them are located in China. As per the latest data released by the Ministry of Industry and Information Technology, 5G smartphone users in China reached 419 million in August 2021 (30% of total Chinese population).

5G increases the speed and responsiveness of the network, enabling vast data aggregation, remote monitoring and real-time response. The growing prevalence of 5G shall unleash the potential of AI applications in healthcare.

With the number of Chinese medical facilities expanding and healthcare expenditure increasing, the Chinese medical device market shall maintain double digit growth over the next five years.  
  
The government-led “Internet + Healthcare” initiative and state-level AI strategy shall propel the digital transformation of China’s medical systems. Omdia projects the medical AI market in China will reach 6 billion US dollars in 2025 (a CAGR of more than 20%).   
  
Startups and hi-tech giants alike are embarking on medical AI solution development, becoming new stakeholders in the Chinese healthcare device market.   
  
As equipment and systems become more connected and integrated, collaboration among healthcare stakeholders will become commonplace. Traditional healthcare equipment suppliers will need to adapt to the digital ecosystem of the Chinese market to survive and thrive.  
  
As observed in the Omdia Healthcare IT – 2021 Topical Report, the future healthcare system will present a very different landscape: from in-hospital care to home-based care; from curing to caring and prevention; from opacity to transparency; and from isolation to connection and collaboration.”

#### R&D key to solve Pandemics

Pandemic Acion Network ’22 (organization driven to create global support and policy making influence to end future pandemcis, “Pandemic R&D Agenda for Action: Fostering Innovation to End This Pandemic and Prepare for the Next One”, 1/25/22) https://www.pandemicactionnetwork.org/news/pandemic-rd-agenda-for-action-fostering-innovation-to-end-this-pandemic-and-prepare-for-the-next-one

As the world commences the third year of the COVID-19 pandemic, the case for investment in research and development (R&D) for medical countermeasures to prevent and combat emerging global health threats is stronger than ever. Despite [tremendous scientific accomplishments in 2020-21](https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html), systemic gaps in pandemic-related R&D systems, supply chains, manufacturing, and delivery continue to stymie the roll-out of urgently needed technologies to all people who need them, everywhere, and are prolonging the pandemic. COVID-19 and its variants have [exposed longstanding market and systems failures and fragilities](https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2021/211029-PandemicVaccineDevelopmentReport.pdf) that pose barriers to timely and effective pandemic R&D. Not only do these persistent gaps threaten to undo progress achieved through the scientific breakthroughs, but they also [exacerbate entrenched inequalities](https://dashboard.pandemicactionnetwork.org/wp-content/uploads/2021/11/Addressing-Market-Failures-The-Role-of-CEPI-in-Bridging-the-Innovation-Gap-to-Prevent-the-Next-Pandemic.pdf) that leave the most vulnerable and disadvantaged people around the globe without access to lifesaving medical countermeasures and essential health services, and perpetuate gross power imbalances between high- and low-income nations. COVID-19 has also unleashed a multitude of actors in pandemic-related R&D across the innovation spectrum and across the globe, underscoring the growing need for more purposeful alignment, coordination, information-sharing, and transparency. The world urgently needs a fit-for-purpose, proactive, and resilient pandemic R&D ecosystem. There is broad consensus that R&D is a vital component of building a world better equipped to prevent, prepare for, and respond to pandemic threats. Yet new investments in innovation will fail to meet their promise to save lives, prevent future global health emergencies, and build a healthier, safer world for all unless governments, international institutions, and industry are willing to heed the hard lessons of this pandemic and work together to fix these systemic failures and challenges. Produced by Global Health Technologies Coalition and Pandemic Action Network with contributions by members of the Pandemic Action Network’s Pandemic Preparedness Working Group, this policy brief calls on world leaders to prioritize action in four key areas to close the critical R&D, manufacturing, and delivery gaps necessary to end the acute COVID-19 crisis and build a more resilient, equitable pandemic R&D ecosystem for the future

#### Future pandemics cause extinction

Eleftherios P. **Diamandis 21** (works for the Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Canada; Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, Canada; Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, Canada. “The Mother of All Battles: Viruses vs. Humans. Can Humans Avoid Extinction in 50-100 Years? 4/13/21 https://www.preprints.org/manuscript/202104.0397/v1)//conway

The recent SARS-CoV-2 pandemic, which is causing COVID 19 disease, has taught us unexpected lessons about the dangers of human extinction through highly contagious and lethal diseases. As the COVID 19 pandemic is now being controlled by various isolation measures, therapeutics and vaccines, it became clear that our current lifestyle and societal functions may not be sustainable in the long term. We now have to start thinking and planning on how to face the next dangerous pandemic, not just overcoming the one that is upon us now. Is there any evidence that even worse pandemics could strike us in the near future and threaten the existence of the human race? The answer is unequivocally yes. It is not necessary to get infected by viruses of bats, pangolins and other exotic animals that live in remote forests in order to be in danger. Creditable scientific evidence indicates that the human gut microbiota harbor billions of viruses which are capable of affecting the function of vital human organs such as the immune system, lung, brain, liver, kidney, heart etc. It is possible that the development of pathogenic variants in the gut can lead to contagious viruses which can cause pandemics, leading to destruction of vital organs, causing death or various debilitating diseases such as blindness, respiratory, liver, heart and kidney failures. These diseases could result n the complete shutdown of our civilization and probably the extinction of human race. In this essay, I will first provide a few independent pieces of scientific facts and then combine this information to come up with some (but certainly not all) hypothetical scenarios that could cause human race misery, even extinction. I hope that these scary scenarios will trigger preventative measures that could reverse or delay the projected adverse outcomes.

**2nc – China AI better**

**China should lead the world with it’s advance AI**

Graham **Allison,** 10-31-20**18**, "Is China Beating the U.S. to AI Supremacy?," Belfer Center for Science and International Affairs, https://www.belfercenter.org/publication/china-beating-us-ai-supremacy

Though still in their infancy, AI technologies will be drivers of future economic growth and national security. From facial recognition and fintech to drones and 5g, China is not just catching up. In many cases, it has already overtaken the United States to become the world’s undisputed No. 1. In some arenas, because of constitutional constraints and different values, the United States willfully forfeits the race. In others, China is simply more determined to win.

China’s AI surge is so recent that anyone not watching closely has likely missed it. As late as 2015, when assessing its international competition, American industry leaders—Google, Microsoft, Facebook and Amazon—saw Chinese companies in their rearview mirrors alongside German or French firms in the third tier. But this changed four years ago—in 2016—when leading AI application company DeepMind fielded a machine that defeated world champion Lee Sedol in the world’s most complex board game, Go.[9](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-049) Even after several American companies’ machines had bested the chess masters of the universe[10](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-048), most Chinese remained confident that machines could never beat Go champions, since Go is ten thousand times more complex than chess. Thus, DeepMind’s decisive victory became for China a “Sputnik moment”[11](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-047)—a jolt as dramatic as the Soviet Union’s launch of the first satellite into space that sparked America’s whole-of nation surge in math and science, nasa’s creation and the original “moon shot.”

Kai-Fu Lee’s book *AI Superpowers* offers an insightful summary of China’s engagement in the field. It began with President Xi Jinping’s personal reaction to the defeat of the world’s Go champion. Declaring that this was a technology in which China had to lead, he set specific targets for 2020 and 2025 that put China on a path to dominance over AI technology and related applications by 2030.[12](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-046) Recognizing that this would have to be led by entrepreneurial companies rather than agencies of government, he designated five companies to become China’s national champions: Baidu, Alibaba, Tencent, iFlytek and SenseTime.[13](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-045) Twelve months after Xi’s directive, investments in Chinese AI startups had topped investments in American AI startups.[14](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-044) By 2018, China filed 2.5 times more patents in AI technologies than the United States.[15](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-043) And this year China is graduating three times as many computer scientists as the United States.

In contrast to nuclear weapons—where governments led in discovery, development and deployment—AI and related technologies have been created and are being advanced by private firms and university researchers. The military establishments in Washington and Beijing are essentially playing catch-up, adopting and adapting private-sector products.

Where do these two competitors stand in the AI race today? Consider leading indicators under six key headings: product market tests, financial market tests, research publications and patents, results in international competitions, talent and national operating environments.

Consumers’ choices of products in markets speak for themselves. In fintech, China stands alone. Tencent’s WeChat Pay has nine hundred million Chinese users,[16](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-042) while Apple Pay only has 22 million in the United States.[17](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-041) And when it comes to capability, WeChat Pay can do much more than Apple Pay. Chinese consumers use their app to buy coffee at Starbucks and new products from Alibaba, pay bills, transfer money, take out loans, make investments, donate to charity and manage their bank accounts. In doing so, they generate a treasure trove of granular data about individual consumer behavior that AI systems use to make better assessments of individuals’ credit-worthiness, interest in products, capacity to pay for them and other behavior. In mobile payments, Chinese spend $50 for every dollar Americans spend, in total, $19 trillion in 2018.[18](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-040) U.S. mobile payments have yet to reach $1 trillion. Credit cards are as old-fashioned to Chinese millennials as handwritten checks are to their American counterparts. Mark Zuckerberg has noticed: Facebook’s major moves last year into digital payments,[19](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-039) including the recent introduction of Facebook Pay, are copying Tencent, rather than the other way around.

In facial recognition, the world’s most valuable AI startup is Chinese company SenseTime[20](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-038)—a company whose headquarters Graham visited in October. (While there, Graham also took a tour of Zhongguancun—China’s version of Silicon Valley—guided by Kai-Fu Lee whose hedge fund is one of the leading VC investors in Chinese AI startups.) In 2018’s international competition for facial recognition, Chinese teams claimed the top five places.[21](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-037) Chinese firms—such as Hikvision and Dahua Technology, which control a third of the world’s security camera market[22](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-036); Tiandy, whose cameras need light from only a single star at night to capture high-definition color images[23](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-035); and Wuhan Guide Infared, which specializes in infrared and thermal imaging—are working hand in glove with their government to perfect facial recognition for profit and control. In this domain, there is no U.S.-China contest; the United States has essentially conceded the race because of concerns over the average individual’s privacy, and deep reservations about how this technology could be deployed. Westerners were alarmed in 2017 when researchers at Stanford created an AI algorithm that could detect with shocking accuracy individuals’ sexual orientation simply by scanning a single photo[24](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-034). It does not take much imagination to consider how less socially liberal governments would apply this technology. So while San Francisco recently banned facial recognition technologies, the Party has given China’s top four facial recognition firms access to its database of over 1.4 billion citizen photos. One well-informed venture capitalist in this arena estimates that Chinese facial recognition firms have 1 million times more images than their U.S. counterparts.

In speech tech, Chinese are beating American firms in all languages—including English. The world’s top voice recognition startup is China’s iFlytek. Its user base is seven hundred million, almost twice the 375 million people who speak to Apple’s Siri.[25](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-033) In system performance competitions, iFlytek regularly beats teams from Google, Microsoft, Facebook, ibm and mit, all in its second language.[26](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-032) At Stanford’s international challenge for machine reading comprehension, Chinese teams won three of the top five spots, including first place. Baidu developed a human-level speech recognition system a year before Microsoft did.

Who was the U.S. Army’s major supplier of commercial drones until 2017—when the United States prohibited purchases for foreign suppliers?[27](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-031) Shenzhen drone maker DJI, which controls 70 percent of the global market[28](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-030). Drones would be just miniature hobby helicopters without elementary AI, which gives them computer vision for targeting weeds or weapons, and enables them to operate in swarms. As the recent attack on Saudi Arabia’s principal oil facilities demonstrated, the world has just begun to discover the security consequences of AI-enhanced drones operating literally below the radar. Of the world’s top five commercial drones brands, 3 are Chinese; 1 American.[29](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-029)

5g infrastructure will be the backbone that enables AI to reach further into everyday life, from automated cars to smart glasses. China’s Huawei is the world’s leading supplier of this telecom equipment. Not only does it own the Chinese market, which will be the world’s largest, but its 28 percent global market share nearly equals the combined shares of its two top competitors.[30](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-028) Of the top four brands that will build 5g infrastructure, two are Chinese and zero are American. Chinese firms own twice as many 5g -essential patents as American firms. While the outcome of the current U.S. government campaign against Huawei remains uncertain, the company is currently delivering 5g systems well ahead of all competitors and is bringing a 5g phone to market a year ahead of Apple, the company that invented the iPhone.

Financial markets reflect these realities. Five years ago, two of the world’s twenty most valuable internet companies were Chinese; today, nine are. The “Seven Giants of the AI age”—Google, Amazon, Facebook, Microsoft, Baidu, Alibaba and Tencent—are split on either side of the Pacific. Of every ten venture capital dollars invested in AI in 2018, five went to Chinese startups; four to American firms.[31](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-027) Of the world’s top ten AI startups, half are American and half are Chinese.

Chinese investments in AI research and development have surged to American levels, and the results are beginning to show it. The blunt truth is that China is laying the intellectual groundwork for a generational advantage in AI. According to the Allen Institute for Artificial Intelligence’s authoritative assessment, China would overtake the United States in 2019 in the most-cited 50 percent of AI papers. It will take the lead in the most-cited 10 percent this year. And by 2025, the United States will fall to second in the top 1 percent of papers.[32](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-026) (Fortunately, in breakthrough papers, China remains behind.) In public patents for AI technologies, China passed the United States in 2015, and in 2018 filed 2.5 times more than America.[33](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-025) In machine learning’s hottest subfield—deep learning—China has six times more patent publications than the United States. (Raw numbers, however, must be taken with a grain of salt, since not all patents are equal.)

**China’s Artificial Intelligence Strategy Poses a Credible Threat to U.S. Tech Leadership**

**CFR**, 12-4-20**17**, "China’s Artificial Intelligence Strategy Poses a Credible Threat to U.S. Tech Leadership," Council on Foreign Relations, https://www.cfr.org/blog/chinas-artificial-intelligence-strategy-poses-credible-threat-us-tech-leadership

Last month, Eric Schmidt, the chairman of Google’s parent company Alphabet, [delivered](https://www.cnas.org/publications/transcript/eric-schmidt-keynote-address-at-the-center-for-a-new-american-security-artificial-intelligence-and-global-security-summit) a wake-up call: the unchallenged technological supremacy that the United States has enjoyed since the fall of the Soviet Union is over. The future will belong to countries that can surf the technological tidal wave of [artificial intelligence](https://www.belfercenter.org/sites/default/files/files/publication/AI%20NatSec%20-%20final.pdf), and while China’s efforts appear up to the challenge, the United States is swimming in the wrong direction.

When China released its national [AI strategic plan](https://www.newamerica.org/cybersecurity-initiative/blog/chinas-plan-lead-ai-purpose-prospects-and-problems/) this summer announcing it would lead the world in AI technology by 2025, some in the military and Silicon Valley scoffed. They repeated the same tired cliché that China’s tech industry and scientific researchers [can’t innovate](https://hbr.org/2014/03/why-china-cant-innovate), only copy. Schmidt, by contrast, sees China’s AI ambitions as completely believable “You’re crazy to treat them as somehow second class citizens” he said, addressing an [audience](https://www.cnas.org/events/artificial-intelligence-and-global-security-summit) full of American national security officials and AI researchers.

Rather than being significantly behind, Chinese programmers now [routinely win](https://www.forbes.com/sites/aarontilley/2017/07/31/china-ai-imagenet/#234be6f7170a) international machine learning competitions. China’s [tech giant Baidu](https://www.wired.com/story/how-baidu-will-win-chinas-ai-raceand-maybe-the-worlds/) is unambiguously one of the global leaders in AI research, having developed an AI system with better-than-human speech recognition performance a year before any Western firm. China is not yet the overall leader in AI technology, but they are not far behind and catching up quickly.

The United States national security and tech communities urgently need to adjust to this new reality. China’s [military and commercial](http://foreignpolicy.com/2017/09/08/china-is-using-americas-own-plan-to-dominate-the-future-of-artificial-intelligence/) AI ambitions pose the first credible threat to United States technological supremacy since the Soviet Union. China’s advantage is its strategic focus and funding to match AI’s extraordinary opportunity. Beijing has not yet announced the funding total for their AI strategy, but it is already clear that the figure is in the billions. Top Chinese leaders, including Xi Jinping, have loudly trumpeted the strategy at nearly every opportunity. The AI strategy rollout resembles that of China’s 2014 national semiconductor plan, which was ultimately allocated [$150 billion](https://www.bloomberg.com/news/articles/2015-06-25/china-has-big-plans-for-homegrown-chips) over ten years.

Moreover, China’s strategy recognizes the essential dual-use nature of artificial intelligence. The same core technological capabilities that enable commercial innovation are equally useful for warfare and espionage. Snapchat uses AI-enabled facial recognition technology to allow teenagers to send each other [funny pictures](https://www.youtube.com/watch?v=Pc2aJxnmzh0). China uses the same technology in support of [domestic surveillance](https://www.wsj.com/articles/the-all-seeing-surveillance-state-feared-in-the-west-is-a-reality-in-china-1498493020). Jaywalk across a street in Shenzhen, and you’re liable to have your face and name displayed onscreen nearby, along with a police reminder that “jaywalkers will be captured using facial-recognition technology.In pursuit of China’s AI policy of “military-civil fusion,” the government has already established joint military-commercial research laboratories and testing facilities in areas like deep learning and autonomous vehicle development. [The same facility](https://www.uscc.gov/sites/default/files/Kania_Testimony.pdf) might support testing of a luxury self-driving car one week, and a self-driving tank the next.

China’s dominance of artificial intelligence technology and its military applications is not only credible but likely in the absence of a massive shift in U.S. policy. The United States needs a surge of focus and funding comparable to the “Sputnik moment” that launched the space race. Unfortunately, it is actually the Chinese who have accurately come to understand the Sputnik-like significance of recent progress in artificial intelligence. After all, Sputnik scared the United States into action because it simultaneously revealed that it was behind in rocketry and that rocketry was a critical technology. Despite China’s astonishing AI progress, it overall remains behind the United States and its allies. For China, the [2016 match](https://www.wired.com/2016/03/two-moves-alphago-lee-sedol-redefined-future/) between the AlphaGo AI system (developed by Google subsidiary DeepMind) and Go world champion Lee Sedoul was a Sputnik moment.

Go, which has been played in China for thousands of years, is a [major fixture](https://www.wsj.com/articles/SB10001424052702304259304576374013537436924) of Chinese culture and strategic thinking. Unsurprisingly, AlphaGo’s victory received greater attention in China than the United States. Many of China’s leading computer scientists attended the matches in person. Like Sputnik, AlphaGo taught China both that AI was going to be the critical technology for the future of economic and military superiority and that they were behind the West. Only a year later, China released its national strategy for AI, which made funding AI research and utilizing AI technology throughout government a national priority.Unfortunately, the Trump administration’s latest budget slashes funding for basic research, including a [10 percent cut](https://www.nytimes.com/2017/05/27/technology/china-us-ai-artificial-intelligence.html?_r=0) to the National Science Foundation’s already meagre AI budget. U.S. policymakers must realize just how wrong their current approach to the AI revolution is. Doing so will require convincing the military and tech industry that their decades-long dominance is truly at risk. Perhaps such a wake-up call would require a Sputnik moment, but if the United States waits for one it will likely be too late.

### 2nc – Central Investment Key

**China’s emphasis on government collaboration is key**

Ruqayya **Anwer 22**, Academic at Riphah International University, Pakistan, Ph.D. holder of media and communication studies, 1-18-2022, “China is winning the power battle in AI race with US,” <https://www.dailysabah.com/opinion/op-ed/china-is-winning-the-power-battle-in-ai-race-with-us>, oj

There is a widespread belief that China is establishing itself as a new superpower, displacing the United States from the **global power structure**. China has undeniably become a worldwide **economic powerhouse**, and it is anticipated to overtake the U.S. as the world's largest economy by 2028. With increased spending on weapons research and the development of multiple covert weapons, China is on the verge of surpassing the U.S. in **military capability**. Significantly, countries that lead in the research and application of artificial intelligence **(AI)** will determine the future of the technology and increase their **economic competitiveness** greatly, while those that fall behind risk losing competitiveness in **critical industries**. AI is set to **revolutionize** the world, empowering those countries that fully realize its promise. It will be a key driver of future **economic growth** and **national security**. Moreover, AI is sometimes referred to as a general-purpose technology because of its wide range of applications in practically every industry – the GUID Partition Table (GPT). A GPT is a technology with widespread economic implications. Only a few examples exist such as steam engines, electricity and computers. These technologies have had a profound impact on our civilizations by modifying preexisting economic and social systems. AI is the newest brilliant, dazzling object on the technological horizon. It has grown very popular in today's globe. It's the simulation of human intellect in computers that have been programmed to learn and mimic human behavior. AI will have a significant impact on our **quality of life** as it develops. It has the potential to significantly boost the economy of a developed country. For its technological advancements, China has won the AI battle with the U.S. and is on its way to world supremacy. According to Western intelligence assessments, China, the **world's second-largest economy**, is expected to **dominate** many major **emerging technologies**, including **AI,** **synthetic biology** and **genetics**, within a decade or two. Pentagon official’s words The **Pentagon**'s first chief software officer, Nicolas Chaillan stressed that “in 15 to 20 years, we have no competing fighting chance against China.” **It's already decided**; “Whether it requires a war or not is kind of anecdotal right now.” He also claimed that several government departments in the U.S. had "**kindergarten-level**" **cyber defenses.** Moreover, Chaillan also criticized the **reluctance** of U.S. firms, such as Google, to **collaborate** with the government on AI, and extensive ethical disputes over technology for the U.S.’ delayed innovation. While China was destined to rule the world's future, everything from **media narratives** to **geopolitics** is under their control. One of the reasons China has been able to move more rapidly than the U.S. is that it is not mired in enormous arguments about **AI ethics.** But partly because Chinese businesses are compelled to collaborate with the government, whereas many American businesses are wary of working with the Pentagon. Google, for instance, halted working with the Pentagon on AI in 2018 after a dozen employees departed after the business assisted the Department of Defense in developing software that could boost drone attack accuracy. Chaillan, on the other hand, stated that Chinese corporations were obligated to comply with the Chinese government and were making "**huge expenditures**" in AI without concern for ethical considerations. Notably, the U.S. has attempted to curb China's emergence as a digital power by prohibiting Huawei's 5G network from operating in the U.S. and establishing a virtual embargo on U.S. companies supplying software and components to Chinese tech firms. Whereas China’s President Xi Jinping is pushing China to establish **technological self-sufficiency** in fields such as microchip manufacturing to wean the country off its reliance on the U.S. Significantly, there will always be economic ups and downs, but the **underlying drive** that's occurring in Chinese culture right now will continue to create **new prospects** and **growth**. China has announced a five-year plan worth $1.8 trillion to dominate **AI,** **robotics, 6G** and **all other technologies** by 2035, releasing a five-year plan worth $1.8 trillion. In comparison to the European Union and the U.S., China's AI capabilities have advanced in several areas. China has surpassed the bloc as the world's **largest AI publisher**. Moreover, the quality of its **AI research** has consistently improved over time. Its software and computer services companies have increased their **R&D expenditures**. China's determination to master AI goes far beyond the recognition that this group of technologies will be the most crucial driver of **economic advancement** over the next quarter-century. China's data collection and national determination have helped it to close the gap with American leaders in this area over the last decade. China now has nearly twice as many supercomputers ranked in the top 500 for performance as the U.S., even though the U.S. was once the leader in this category. Furthermore, China is likely to maintain its advantage in terms of **data generation**. Overall, though, China has not dramatically narrowed the AI gap with the U.S., but its steady growth could eventually erode U.S. dominance over the technology. Consequently, countries that lead in the research and application use of AI will determine the future of the technology and increase their economic competitiveness greatly, while those that fall behind risk losing competitiveness in critical industries. As a result, China has taken the lead. The Chinese government, rules and regulations, public attitudes toward privacy and strong collaboration between corporations and the government are all contributing to the country's AI progress. At the same time, American AI confronts significant challenges, including a culture that prioritizes **privacy over security**, distrusts authority and the government; as such, firms are wary of collaborating with the U.S.

**China has advantages in speed, execution, product quality, data, and government support.**

Kai-Fu **Lee 18**, Kai-Fu Lee is the CEO of Sinovation Ventures and author of AI Superpowers. Lee was formerly the president of Google China and a senior executive at Microsoft, SGI, and Apple. Co-chair of the AI Council at the World Economic Forum, he has a bachelor’s degree from Columbia and a PhD from Carnegie Mellon, 10-23-2018,“Why China Can Do AI More Quickly and Effectively Than the US,” <https://www.wired.com/story/why-china-can-do-ai-more-quickly-and-effectively-than-the-us/>, oj

WHEN ENRICO FERMI decided to leave Benito Mussolini’s Italy and emigrate to the United States, he changed the global balance of power. After arriving in the US, Fermi led the world’s first self-sustaining nuclear reaction at the University of Chicago and played an indispensable role in the Manhattan Project, which led to the end of World War II in the Pacific and laid the groundwork for a new world order and America’s prominent role. So it is not surprising that some Americans think the same should be true with AI. Emigrant AI researchers like Geoff Hinton, Yann LeCun, Yoshua Bengio, Andrew Ng, and Fei-Fei Li are the Enrico Fermis of AI and should secure an American (and Canadian) hegemony in AI. Indeed, the US and Canada have 100 percent of the top 10 AI researchers, and 68 percent of the world’s best 1,000 or so researchers. But **technological revolutions** are not only driven by **big discoveries**. Often, once a **fundamental breakthrough** has been published, the center of gravity quickly shifts from a handful of **elite researchers** to an **army of tinkerers**—engineers with enough expertise to apply the technology to different **real-world problems** and customer needs. This is particularly true when the payoff of a breakthrough is diffused throughout society rather than just concentrated in a few labs. Mass electrification exemplified this process. Following Thomas Edison’s harnessing of electricity, the field rapidly shifted from **invention to implementation**. Thousands of engineers everywhere began tinkering with electricity, using it to power new devices and reorganize industrial processes. Those tinkerers didn’t have to break fundamentally new ground like Edison. They just had to know enough about how electricity worked to turn its power into useful and profitable machines. Our present-day phase of **AI implementation** fits this latter model. But you might say: A constant stream of headlines about AI breakthroughs (AlphaGo, Stanford beating doctors in cancer diagnosis, Microsoft beating human in speech recognition, etc.) shows that we are still in an age of discovery. In reality, we are witnessing the application of the same **fundamental breakthrough**—**deep learning** and related techniques—to many different problems. That’s a process that requires well-trained **AI engineers**, the tinkerers of this age, to apply and tweak deep learning for each domain. Today, those tinkerers are applying AI’s superhuman powers of pattern recognition to making loans, driving cars, translating text, and powering our Amazon Go and Amazon Alexa. Deep-learning pioneers like Geoffrey Hinton, Yann LeCun, and Yoshua Bengio—the Enrico Fermis of AI—continue to push the boundaries of **artificial intelligence**. And they may yet produce another game-changing breakthrough, one that scrambles the global technological pecking order. But in the meantime, the real action today is with the tinkerers, those who implement AI and make it solve real-world problems. And this is where **China** comes in—while the US is the world’s leader in AI discoveries, China is actually the leader in AI implementation. What matters in AI implementation is **speed, execution, product quality, data, and government support**. **Chinese companies** are equal to or ahead of their **American counterparts** in each of these areas. First, let’s look at speed. The Chinese environment is a combination of a **huge market, ample capital, and daring entrepreneurs** who are the embodiment of “lean startup”: fail fast, fail early, and fail often. Chinese entrepreneurs are fast to find market opportunities, build products, and pivot when needed. For example, after companies like Uber and Didi proved the viability of ride-sharing, China’s startup world caught sharing fever, trying out every possible iteration of it: shared bicycles, shared mopeds, shared concrete mixers, and shared mobile phone chargers. The vast majority of these died off quickly (known as fail fast), but a few rose to become unicorns, such as Mobike, which reached 20 million rides per day and was sold for $2.7 billion three years from founding. This rapid prototyping and tweaking approach have also enabled Chinese AI companies to find winners. For example, Megvii (Face++) is a computer vision company that originally tried face morphing games and face unlock of phones before striking gold on finance fraud avoidance as the killer app (think of credit card companies using face scan instead of customer service “quizzes” on suspicious credit card usage). As mobile payments ballooned to $18.8 trillion in China, this turned out to be the winner. In another example, AInnovation started on AI sales forecast but added hardware products like computer-vision driven vending machines and whole-basket check-out kiosks, all within six months. There are many other examples like this in my book, AI Superpowers. In execution, Chinese entrepreneurs are unafraid of the tedious, messy, and risky tasks, if they help achieve the ultimate result. Chinese CEOs usually have **absolute power** within the company, which makes execution much more effective. As an example, the “Chinese Groupon” Meituan was tenacious in focusing on users’ needs and found a way to nail that problem. They found that people wanted to eat take-out food, but it had to be delivered with 30 minutes (including cooking time), and the cost must be brought down to about 70 cents per delivery in order to profitably offer “free delivery.” Meituan then maniacally worked on this problem for years, eventually hiring 600,000 people on mopeds, adopting an Uber model, finding riders willing to work during meal hours, tweaking the lowest-cost delivery vehicle (battery-operated mopeds), solving the battery life problem for mopeds, inventing AI matching and routing algorithms. After billions of dollars of losses and many years of iterations, Meituan managed deliver food to any destination within 30 minutes and under 70 cents. That totally changed the way Chinese people eat. And that differentiated it from the US Groupon, Yelp, and OpenTable, which collectively are worth less than one-tenth of the $60 billion valuation. Meituan chose this approach rather than resting on its laurels like Groupon and Yelp, because Chinese entrepreneurs are tenacious and if you have a profitable “light-weight” business, you will find yourself surrounded by entrepreneurs who want a share of your profits. Fierce competition pushes entrepreneurs to improve the product at lightning speed, with incredible work ethic, always pressured to develop impregnable business models. As a result, Chinese products often evolved into better products than their American counterparts (e.g., Wechat vs. Whatsapp, Weibo vs. Twitter, Taobao vs. eBay). The Chinese market rapidly embraces new products and new paradigms. Just within the last 3 years, mobile payments have emerged as the dominant transaction tool, replacing cash and credit cards. Total transaction in 2017 was $18.8 trillion, even larger than China’s GDP. China’s mobile payments are built on the world’s best infrastructure: nearly zero-transaction-fee, micropayment-capable, and peer-to-peer. Over 700 million Chinese users can pay each other, whether for online, offline, loan, or gift, whether to your child, a farmer in a village, or even a beggar. All of this is amplified by China’s enormous market size, which generates the **treasure trove** of data that fuels AI (AI is usually more improved by more data than better AI engineers). China’s data edge is three times the US based on mobile user ratio, 10 times the US in food delivery, 50 times in mobile payment, and 300 times in shared bicycle rides. All this rich data is used to make Chinese companies’ AI work better. Finally, the Chinese **government’s support** of AI development will prove important in the age of AI, though not in the way most Western analysts believe. Western narratives trivialize the government’s role as subsidizing winners and protecting them from foreign competition. But actually, sophisticated government support comes in three forms, which are neither blind nor anti-competitive: (1) **Central government** sets the tone, which can legitimize a burgeoning industry like AI and influence companies and consumers to adopt AI (and smart young people to go into AI); (2) **techno-utilitarian policy**, which allows unproven technology to be launched early and quickly and adds regulation only if necessary later (enabling a nation-wide displacement of cash and credit cards with mobile payment); (3) **infrastructure-building**, such as rebuilding cities and highways with special roads with sensors and special lanes or “levels” for autonomous vehicles (contrasted with the US decision to slow down autonomous truck testing due to job displacement concerns). As a result of all of the above, China has the world’s most valuable companies in computer vision, drones, speech recognition, speech synthesis, and machine translation. Sinovation Ventures, my VC company, now has five AI unicorns, with a combined valued of $23B. These companies were founded only two to four years ago. The speed, execution, product focus, access to data, and government support are significantly higher than their American counterparts. So can we conclude that China is the de facto winner of the AI race? No, because researchers worldwide are still plunging ahead. Not long ago, Geoff Hinton made a call for top researchers to abandon deep learning and develop brand-new machine learning algorithms that can come closer to human intelligence. So what can this balance of strengths and weaknesses tell us about international leadership in AI? Here, it helps to zoom in on perhaps the most coveted of all AI-powered products: fully autonomous vehicles. Companies in both countries are feverishly chasing the dream of mass deployment of cars that drive themselves. They’ve made great strides toward this goal, but it still remains an open question which company or country will get there first. That question gets right to the crux of the US-China dichotomy between visionary research and practical implementation. Waymo (an Alphabet company) jumped out to a major lead in autonomous vehicles because it was willing to think big and take risks. Once Waymo demonstrated that this was possible (in large part due to breakthroughs like deep learning), companies in both the United States and China started playing catch-up. At the same time, local Chinese officials began competing with each other to attract autonomous-vehicle startups, pledging to build entirely new public infrastructure projects to facilitate deployment: highways lined with sensors that communicate with vehicles and elevated roads reserved for training autonomous vehicles. The winner in this race will likely depend on whether the final bottleneck is about core technology or implementation details. If the bottleneck is technical—major improvements for core algorithms—then advantage US. If the bottleneck is about implementation—smart infrastructure or policy adaptation—then advantage China. What should the US do in light of the rising Chinese AI capabilities? I have three suggestions. First, move away from trivializing the Chinese approach (e.g., copycat, government protectionism), recognize that the Chinese approach has merit, and be open to learning from it. Second, double down on fundamental research, where the US has a huge lead over the rest of the world. American universities attract top students around the world, who learn AI in the US, and many will choose to stay. Third and most important, recognize that AI development is not the new cold war. AI is more like electricity than nuclear weapons. US and China have much to learn from each other. And the opportunities and challenges from AI are much larger than any threat or competition from any one country to another.

### 2nc – China ahead now

**China has leadership in every AI sector.**

Aaron **Smith 22**, Aaron Smith is a senior from Nottingham, England studying Environmental Studies and International Relations, while pursuing a Master of Environmental Studies through the Progressive Degree Program, 1-6-2022, “How China surpassed the U.S. in the race for AI supremacy,” <https://uscgpi.com/2022/01/06/how-china-surpassed-the-u-s-in-the-race-for-ai-supremacy/>, oj

Nick Chaillan, the **U.S. Department of State’**s first-ever software chief, resigned in September 2021. He claimed that the United States had “no competing **fighting chance** against China in the next 15 to 20 years.” China is currently winning the race toward **global dominance** in **artificial intelligence**. But how did China get so far ahead? AI technology will play a major role in driving **economic growth** and **national security** in the foreseeable future. China’s AI investment is a new development that only started to gain traction in the past several years. In 2015, China was still behind the United States, along with French and German AI firms as well. However, one event in 2016 pushed China on its upward slope toward AI supremacy. DeepMind, a leading AI application company, created a machine that beat the world champion in Go, the world’s most complex board game. By this time, many American companies had already constructed machines capable of beating chess world champions. However, Go is thousands of times more complex than chess, so many were confident that it would be impossible to create such a machine. Yet, China did it. Skepticism about the potential of China’s AI technology triggered a reaction from President Xi Jinping; contrary to what was being said, he declared that China would become a leader in AI. In the years that followed, Beijing prioritized **artificial intelligence** and **cyber capabilities** over traditional **military spending**, leading to an **aggressive approach** in dominating the AI industry with a specific focus on **surveillance** and **data collection**. Xi wanted **major tech companies**, instead of government agencies, to lead this innovation. He appointed five national champions — Alibaba for smart cities; Baidu for autonomous driving; iFlytek for voice recognition; SenseTime for facial recognition; and Tencent for computer vision for medical imaging. Xi also set targets that would ensure China’s dominance in AI technology and other related sectors by **2030**. And just one year after Xi set his targets and appointed AI leaders, China saw **major advancements** in its race against the United States. Investments in Chinese AI startups overtook investments in American **AI startups**; China filed **2.5 times** more patents than the United States for AI technologies by 2018. And in 2020 China had **three times** the number of college graduates in the **computer sciences** than the United States did. WeChat, which was developed by Tencent, became the world’s **largest mobile app** in 2018 with over 1 billion monthly users. The app can collect major quantities of data thanks to government support and Newark privacy policies. Today, China dominates the various sectors of AI technology. In financial technology, Apple Pay in the United States has 22 million users. On the other hand, Tencent’s WeChat Pay has 900 million users in China and greater technological capabilities than Apple Pay, which allows the app to generate vast amounts of data about consumer behaviors that Chinese systems can then use to develop more advanced technology. Moreover, in 2018 Chinese consumers spent $19 trillion through mobile payments, while the United States is still struggling to hit $1 trillion. In **facial recognition**, Washington essentially dropped out of the race due to privacy concerns and the ethics of how this technology could be deployed. Beijing, however, claimed the top 5 spots in the 2018 international competition for facial recognition. Chinese firms individually control a **third** of the world’s security cameras, can capture high-definition color images with minimal light, and specialize in thermal imaging. Together, they work with Beijing to perfect this technology for both profit and security purposes. China is also beating the United States in **speech technology**. iFlytek, the world’s top voice recognition company, has a user base of almost double the number of Siri users, with 700 million people using iFlytek. And once again, Chinese teams claimed three of the top five spots, including first place, at Stanford University’s international competition for machine reading comprehension. Of the world’s top five commercial **drone** brands, three of them are Chinese brands, while just one is American, with Shenzhen drone company DJI controlling 70% of the global market of drone technology. Additionally, **5G infrastructure** is essential for a future that runs on AI technology. China has two firms within the top four global leaders for providing this technology, while the United States. has none. Huawei, a Chinese firm, is the world’s leading supplier of 5G infrastructure and technology, occupying 28% of the global market share — equalling the combined shares of its two biggest competitors. However, many consider China far behind the United States when it comes to AI ethics and governance. American social culture and political culture values privacy over security and fosters distrust in authority and the government. American values have led to early debates and conversations on how to regulate AI and its algorithms. These discussions have made it difficult for the United States to significantly advance its AI technology. On the other hand, AI ethics have not been as large of an issue in China. Public opinions in China about privacy have allowed AI to quickly develop. In fact, it wasn’t until October 2021 that China issued its first guidelines on **AI ethics**, prioritizing user rights and data control. China is not just trying to gain **global dominance** in AI technology but is currently **succeeding** and dominating all aspects of the field. AI will have the potential to greatly affect commerce, national security and general society in the next couple of decades. If it wants to keep up, the United States needs to make a decision about whether it will invest in AI technology and begin to seriously compete with China, or continue to waiver on AI and prove Nick Chaillan right.

#### **China is on its way to world AI supremacy**

Paul Brian, 3-13-2022, "The United States Has Fallen Behind China on Artificial Intelligence," National Interest, https://nationalinterest.org/blog/techland-when-great-power-competition-meets-digital-world/united-states-has-fallen-behind-china

The recent Beijing Olympics showcased one particular threat, as China trotted out new artificial intelligence (AI) and robotics technologies with vital relevance to Washington’s current geopolitical tensions with Beijing. From driverless buses to high-speed rail powered by 5G, advanced Chinese technology was featured front and center. Indeed, the digital currency-only games, focused around the e-CNY currency which has already been[picked up](https://www.reuters.com/world/china/chinas-digital-yuan-wallets-swell-usage-lags-2022-01-17/#:~:text=During%20July%2DOctober%20last%20year,billion%20yuan%20(%249.77%20billion).) by some 140 million people, were a little peek into a reality that China has embraced while the West has dithered.

As the recent Olympics emphasized, AI is a driving obsession for China. The robot chefs making burgers at Olympic facilities and the smart beds measuring athletes’ vital statistics weren’t just gimmicks for the cameras: they’re a symbol of how China has quickly eclipsed the United States when it comes to the deployment and use of AI technologies.

China is doubling down on next-generation tech in general and AI in particular, while the United States is falling behind—to such an extent that the Pentagon’s first chief software officer Nicolas Chaillan[resigned last fall](https://www.ft.com/content/f939db9a-40af-4bd1-b67d-10492535f8e0?utm_source=Sailthru&utm_medium=email&utm_campaign=Recode%2010.13.2021&utm_term=Recode" \t "_blank) in protest over the slow pace of technological transformation in the United States, saying that “**we have no competing fighting chance against China in 15 to 20 years.**”

According to Chaillan, there’s no way Washington is going to catch up to Beijing’s cyber and AI capabilities. Many experts concur—Graham Allison, of the Belfer Center, recently[noted](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy) that many American officials are far too complacent about Western supremacy in technology, while Pakistani researcher Ruqayya Anwer[wrote](https://www.dailysabah.com/opinion/op-ed/china-is-winning-the-power-battle-in-ai-race-with-us" \t "_blank) in an op-ed earlier this year that “China has won the AI battle with the U.S. and is on its way to world supremacy.” In particular, Anwer concluded that China will vastly dominate any number of strategic technologies, including AI, within a decade or two.

The West has offered plenty of excuses for lagging behind on AI, not least arguments about how Communist China doesn’t have the same ethical standards and privacy concerns as Europe and North America. The truth, however, is that AI will be increasingly key to the future of national power and cohesion. In stark terms—if the United States wants to preserve its values and keep pace with China, it needs to get very serious about AI, very fast.

Up until now, that has simply not been the case. Successive American administrations have let AI languish—and, as a result, even American-based AI firms are looking abroad for business. Take NASDAQ-listed Remark Holdings, for example. Remark is doing[crucial work](https://www.prnewswire.com/news-releases/brightline-collaborates-with-remark-ai-to-build-on-its-smart-safety-solutions-301424116.html) by developing AI-based solutions such as its platform which uses computer vision to monitor transport corridors like[Florida’s Brightline Rail](https://www.npr.org/2020/01/29/799962246/brightline-nations-deadliest-railroad-after-high-number-of-track-deaths)—the United States’ deadliest railway per mile—and make them safer. Nevertheless, Remark Holdings currently[generates](http://ir.remarkholdings.com/static-files/fe507f94-511e-4bae-a5aa-da520f4cdba5) the majority of its revenue in China—for one simple reason, the fact that China has a history of valuing and prioritizing AI, while the United States doesn’t.

As for the military side of things, the United States is far behind. Only now is the American military properly stepping away from its longtime use of[Chinese-manufactured DJI drones](https://www.voanews.com/a/usa_us-military-still-buying-chinese-made-drones-despite-spying-concerns/6175967.html) and[using](https://www.thedrive.com/the-war-zone/44230/army-buys-artificial-intelligence-infused-folding-quadcopters-for-battlefield-use) American-made AI drones, from U.S. manufacturer Skydio, instead. That’s a bit late to the party, to say the least, given the fact that security concerns have persisted for years over using Chinese technology in sensitive sectors.

While the U.S. Department of Defense has increasingly[committed](https://www.thedrive.com/the-war-zone/39559/national-security-commission-warns-u-s-is-not-prepared-to-defend-or-compete-with-china-on-ai) to developing American-made AI tools, leading figures like former Deputy Secretary of Defense Robert Work are clear about the challenges ahead, noting that “America is not prepared to defend or compete in the AI era.”

Economically, letting AI fall to the wayside is also incredibly shortsighted and negligent. From farming to manufacturing, artificial intelligence could give humans an assist, helping them do their jobs faster and more efficiently—yet while China leaps ahead in this regard, the United States keeps on taking half measures.

It’s time to take real steps to turn that around. The House and Senate both seem confused and unsure about how to truly meet China’s rising AI prowess, but there should be a bipartisan drive to take a quantum leap forward in funding and promotion of AI if the United States wants to maintain its leading position in the twenty-first century.

More specifically, putting AI at the forefront while also successfully addressing ethical concerns requires leaning on America’s strength in technology infrastructure and focusing on getting people familiar and enthusiastic about AI, including by funding more departments at universities and other institutions.

There is also significant potential for the United States to team up with partner nations in NATO for co-funding research and investment opportunities on AI. The United States doesn’t really have an adequate intellectual supply of professionals in the machine learning and AI field, which is why NATO partnerships as well as teaming up with nationals from places like India is a potentially promising proposal.

Educating the American public on the importance of keeping up in the AI race will be critical. As Gregory Dawson and Kevin DeSouza from Brookings recently[observed](https://www.brookings.edu/blog/techtank/2022/02/03/how-the-u-s-can-dominate-in-the-race-to-national-ai-supremacy/), the American population seems to either view AI “as a futuristic utopia or an impending disaster”—with little nuance in the middle.

“Without a realistic view of the world of AI,” they argued, “the populace is unlikely to understand the need for engagement, and the prospects that the industry sector offers”.

What’s clear is that the United States can no longer afford to fall behind in the AI race, which is shaping up to be the twenty-first-century equivalent of the space race. American officials can’t talk seriously about national security and securing the future if they’re going to continue treating civilian and military applications of AI as an afterthought.

**China is ahead in AI development** – they’ve overtaken the US in patents filled, Compsci graduates, 5G, and research papers

Graham **Allison 18** ("Is China Beating the U.S. to AI Supremacy?," Belfer Center for Science and International Affairs, 10-31-2018, https://www.belfercenter.org/publication/china-beating-us-ai-supremacy)

Though still in their infancy, AI technologies will be drivers of future economic growth and national security. From facial recognition and fintech to drones and 5g, China is not just catching up. In many cases, it has already overtaken the United States to become the world’s undisputed No. 1. In some arenas, because of constitutional constraints and different values, the United States willfully forfeits the race. In others, China is simply more determined to win.

China’s AI surge is so recent that anyone not watching closely has likely missed it. As late as 2015, when assessing its international competition, American industry leaders—Google, Microsoft, Facebook and Amazon—saw Chinese companies in their rearview mirrors alongside German or French firms in the third tier. But this changed four years ago—in 2016—when leading AI application company DeepMind fielded a machine that defeated world champion Lee Sedol in the world’s most complex board game, Go.[9](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-049) Even after several American companies’ machines had bested the chess masters of the universe[10](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-048), most Chinese remained confident that machines could never beat Go champions, since Go is ten thousand times more complex than chess. Thus, DeepMind’s decisive victory became for China a “Sputnik moment”[11](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-047)—a jolt as dramatic as the Soviet Union’s launch of the first satellite into space that sparked America’s whole-of nation surge in math and science, nasa’s creation and the original “moon shot.”

Kai-Fu Lee’s book *AI Superpowers* offers an insightful summary of China’s engagement in the field. It began with President Xi Jinping’s personal reaction to the defeat of the world’s Go champion. Declaring that this was a technology in which China had to lead, he set specific targets for 2020 and 2025 that put China on a path to dominance over AI technology and related applications by 2030.[12](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-046) Recognizing that this would have to be led by entrepreneurial companies rather than agencies of government, he designated five companies to become China’s national champions: Baidu, Alibaba, Tencent, iFlytek and SenseTime.[13](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-045) Twelve months after Xi’s directive, investments in Chinese AI startups had topped investments in American AI startups.[14](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-044) By 2018, China filed 2.5 times more patents in AI technologies than the United States.[15](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-043) And this year China is graduating three times as many computer scientists as the United States.

In contrast to nuclear weapons—where governments led in discovery, development and deployment—AI and related technologies have been created and are being advanced by private firms and university researchers. The military establishments in Washington and Beijing are essentially playing catch-up, adopting and adapting private-sector products.

Where do these two competitors stand in the AI race today? Consider leading indicators under six key headings: product market tests, financial market tests, research publications and patents, results in international competitions, talent and national operating environments.

Consumers’ choices of products in markets speak for themselves. In fintech, China stands alone. Tencent’s WeChat Pay has nine hundred million Chinese users,[16](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-042) while Apple Pay only has 22 million in the United States.[17](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-041) And when it comes to capability, WeChat Pay can do much more than Apple Pay. Chinese consumers use their app to buy coffee at Starbucks and new products from Alibaba, pay bills, transfer money, take out loans, make investments, donate to charity and manage their bank accounts. In doing so, they generate a treasure trove of granular data about individual consumer behavior that AI systems use to make better assessments of individuals’ credit-worthiness, interest in products, capacity to pay for them and other behavior. In mobile payments, Chinese spend $50 for every dollar Americans spend, in total, $19 trillion in 2018.[18](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-040) U.S. mobile payments have yet to reach $1 trillion. Credit cards are as old-fashioned to Chinese millennials as handwritten checks are to their American counterparts. Mark Zuckerberg has noticed: Facebook’s major moves last year into digital payments,[19](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-039) including the recent introduction of Facebook Pay, are copying Tencent, rather than the other way around.

In facial recognition, the world’s most valuable AI startup is Chinese company SenseTime[20](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-038)—a company whose headquarters Graham visited in October. (While there, Graham also took a tour of Zhongguancun—China’s version of Silicon Valley—guided by Kai-Fu Lee whose hedge fund is one of the leading VC investors in Chinese AI startups.) In 2018’s international competition for facial recognition, Chinese teams claimed the top five places.[21](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-037) Chinese firms—such as Hikvision and Dahua Technology, which control a third of the world’s security camera market[22](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-036); Tiandy, whose cameras need light from only a single star at night to capture high-definition color images[23](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-035); and Wuhan Guide Infared, which specializes in infrared and thermal imaging—are working hand in glove with their government to perfect facial recognition for profit and control. In this domain, there is no U.S.-China contest; the United States has essentially conceded the race because of concerns over the average individual’s privacy, and deep reservations about how this technology could be deployed. Westerners were alarmed in 2017 when researchers at Stanford created an AI algorithm that could detect with shocking accuracy individuals’ sexual orientation simply by scanning a single photo[24](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-034). It does not take much imagination to consider how less socially liberal governments would apply this technology. So while San Francisco recently banned facial recognition technologies, the Party has given China’s top four facial recognition firms access to its database of over 1.4 billion citizen photos. One well-informed venture capitalist in this arena estimates that Chinese facial recognition firms have 1 million times more images than their U.S. counterparts.

In speech tech, Chinese are beating American firms in all languages—including English. The world’s top voice recognition startup is China’s iFlytek. Its user base is seven hundred million, almost twice the 375 million people who speak to Apple’s Siri.[25](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-033) In system performance competitions, iFlytek regularly beats teams from Google, Microsoft, Facebook, ibm and mit, all in its second language.[26](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-032) At Stanford’s international challenge for machine reading comprehension, Chinese teams won three of the top five spots, including first place. Baidu developed a human-level speech recognition system a year before Microsoft did.

Who was the U.S. Army’s major supplier of commercial drones until 2017—when the United States prohibited purchases for foreign suppliers?[27](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-031) Shenzhen drone maker DJI, which controls 70 percent of the global market[28](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-030). Drones would be just miniature hobby helicopters without elementary AI, which gives them computer vision for targeting weeds or weapons, and enables them to operate in swarms. As the recent attack on Saudi Arabia’s principal oil facilities demonstrated, the world has just begun to discover the security consequences of AI-enhanced drones operating literally below the radar. Of the world’s top five commercial drones brands, 3 are Chinese; 1 American.[29](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-029)

5g infrastructure will be the backbone that enables AI to reach further into everyday life, from automated cars to smart glasses. China’s Huawei is the world’s leading supplier of this telecom equipment. Not only does it own the Chinese market, which will be the world’s largest, but its 28 percent global market share nearly equals the combined shares of its two top competitors.[30](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-028) Of the top four brands that will build 5g infrastructure, two are Chinese and zero are American. Chinese firms own twice as many 5g -essential patents as American firms. While the outcome of the current U.S. government campaign against Huawei remains uncertain, the company is currently delivering 5g systems well ahead of all competitors and is bringing a 5g phone to market a year ahead of Apple, the company that invented the iPhone.

Financial markets reflect these realities. Five years ago, two of the world’s twenty most valuable internet companies were Chinese; today, nine are. The “Seven Giants of the AI age”—Google, Amazon, Facebook, Microsoft, Baidu, Alibaba and Tencent—are split on either side of the Pacific. Of every ten venture capital dollars invested in AI in 2018, five went to Chinese startups; four to American firms.[31](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-027) Of the world’s top ten AI startups, half are American and half are Chinese.

Chinese investments in AI research and development have surged to American levels, and the results are beginning to show it. The blunt truth is that China is laying the intellectual groundwork for a generational advantage in AI. According to the Allen Institute for Artificial Intelligence’s authoritative assessment, China would overtake the United States in 2019 in the most-cited 50 percent of AI papers. It will take the lead in the most-cited 10 percent this year. And by 2025, the United States will fall to second in the top 1 percent of papers.[32](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-026) (Fortunately, in breakthrough papers, China remains behind.) In public patents for AI technologies, China passed the United States in 2015, and in 2018 filed 2.5 times more than America.[33](https://www.belfercenter.org/publication/china-beating-us-ai-supremacy#footnote-025) In machine learning’s hottest subfield—deep learning—China has six times more patent publications than the United States. (Raw numbers, however, must be taken with a grain of salt, since not all patents are equal.)

#### China is on their way to become a global leader in AI

Initiative For U.S.-China Dialogue On Global Issues 5-6-2022, Initiative For U.S.-China Dialogue On Global Issues, 5-6-2022, "Chinese Artificial Intelligence and the Future of Technology and Trade," No Publication, https://uschinadialogue.georgetown.edu/events/chinese-artificial-intelligence-and-the-future-of-technology-and-trade, accessed 7-15-2022

China is angling to become a global leader in artificial intelligence (AI) theory and technology and has invested heavily in hopes of developing it into a $150 billion industry by 2030. According to the country’s Ministry of Industry and Information Technology, in the past decade, China has filed nearly 390,000 AI patents. Chinese leaders also view AI as a key component for the country’s future economic transformation and growth. What are the different specialized sectors in AI, and how does China perform in areas like facial recognition, hardware, software, and voice intellection? Meanwhile, some of China's leading companies have yet to turn profits and have been added to an investment blacklist by the U.S. Department of Treasury for alleged involvement in surveillance on minorities in Xinjiang. This panel brought together experts to discuss Chinese AI’s domestic opportunities and challenges, international competition, as well as the economic, ethical, and military implications of this innovative industry.

#### China is way ahead of US in AI

Matt Hamblenjun, 6-19-2021, "China’s ahead in tech. Here’s where to start the comeback.," Fierce Electronics, https://www.fierceelectronics.com/electronics/china-s-ahead-tech-here-s-where-to-start

President Biden often speaks about challenges to democracy from autocracies such as China and Russia, but there are ways that the U.S. form of democracy, capitalism and strategic investment could be improved without calling out other countries for violating humanitarian principles.

One way is for U.S. policymakers, CEOs and research institutions to get better organized and coordinated, especially to compete with China on the technology front. Recent Senate passage of the $250 billion U.S. Innovation and Competition Act USICA to help the supply chain and build more chip fabs is a good start.

Make no mistake, the Chinese are ahead technologically—and way ahead in some quarters.  A space race seems to be underway.  Recently, the country landed a rover on Mars without the need for decades of advance flights. Last week, China sent three astronauts into orbit to build a space station after being locked out of the International Space Station a decade ago over security concerns lodged by the U.S.

China is also pursuing research in artificial intelligence and quantum computing at a pace that is difficult to measure, but could render the U.S. and its allies anemic in cybersecurity wars in coming years. The EV and autonomous vehicle progress in China exceeds most nations.

Some senators who voted in favor of USICA brought up all the reasons to worry about China, including the proclivity of Chinese companies to steal intellectual property of U.S. firms. Their argument basically goes that the U.S. has the smart engineers and isn’t it a shame that the thieving Chinese are able to benefit from it. But that reasoning begs the question: Why was the coveted IP not commercialized in the U.S. as well, or ahead of the Chinese in the first place?

The richest companies in the U.S. are starting to increase investment in R&D, but there is also apparently a need to take new ideas and apply venture capital to bring products to the fore. The U.S. may have more padded investors than any other country and some of the greatest minds and inventions, but all that has not given the U.S. the edge, yet, in vital products that will fight the next pandemic or vastly improve clean energy production or face off threats from China, real or imaginary.

Publicly traded companies in the U.S.  focus heavily on quarterly earnings, but relatively few have produced long-term plans for growth beyond five or 10 years with a few offering glib projections of zero carbon emissions by 2050. The federal government of the last 40 years has dropped the ball, frankly, on paying attention to vital supplies, allowing chip companies to find the lowest-cost supplier in countries where wages are lower and materials are closer at hand. It’s the American Way, of course, to keep costs down, but at what long-term expense?

Competition in the U.S. seems to make every technology company in Silicon Valley the opponent of its neighbor just across the highway, while the attitude in China seems to be one of cooperation by all with a set long-term agenda. Having such centralized coordination makes the entire U.S. enterprise—from Congress to the smallest chip designer—look in terrible disarray or at least unable to look beyond the bounds of a single company’s balance sheet.

Human rights

Of course, it is easy to cite human rights abuses in China with [reports of abuses](https://www.bbc.com/news/world-asia-china-22278037%C2%A0)of Hong Kong protesters or millions of Uighurs in Xinjiang. (China’s apparent interest in controlling the South China Sea makes the technology race more imperative.)

Our hearts go out to all the victims of humanitarian abuse. However, China’s humanitarian practices cannot offer an excuse for a seemingly brain-dead or half-awake institutional and governance approach in the U.S. to applying a strong focus on R&D and efforts to improve the efficiency of processes to bring ideas to full fruition. Years ago, it would have helped if there were more government coordination and private cooperation in fostering a strong RAN (Radio Access Network) technology provider based in the U.S. Meanwhile, Huawei in China became strong in that technology and others, and it is evident how much concern that has caused with U.S. companies losing out on sales to Huawei due to U.S. government prohibitions.

President Biden, thankfully, seems to understand how trade, tech innovation, China and foreign policy are all interwoven, but it is going to take years to meet the Chinese technology challenge at the present pace. Let’s face it: China will indeed become the largest economy in 2027 and it’s about time for top investors and CEOs to grapple with that reality. It may mean looking inside the U.S. and stretching to create new partnerships for better cooperation and financing.

The Biden administration pushed last week for the Group of Seven nations to adopt a Build Back Better World (B3W) initiative as an apparent challenge to the ambitious Beijing Belt and Road Initiative (BRI). But the B3W so far only sounds like a nice name.[It is intended to prod](https://www.reuters.com/world/g7-counter-chinas-belt-road-with-infrastructure-project-senior-us-official-2021-06-12/%C2%A0) the G7 and its allies to mobilize private sector capital in areas such as climate, health and health security, digital technology and gender equity and equality. While that plan is still in its infancy, China with its BRI has signed agreements with more than 100 countries to cooperate in 2,600 BRI projects worth $3.7 trillion, according to a Refinitiv database.

There are some concrete steps that can be taken, going beyond what USICA does, to enhance coordination for greater technology efficiency and production domestically. One might be the creation of a new federal agency (yes, more government!) to develop and implement advanced industry and technology strategy, as the Information Technology and Innovation Foundation recently proposed.  It would be “explicitly focused on the commercial competitiveness of select sectors that are most critical to the economy,”[ITIF said in a report.](https://protect-us.mimecast.com/s/4ex7CgJNyPCv5rRSE3vsW?domain=u7061146.ct.sendgrid.net)

Another reality must also be addressed, at least regarding chip production. With the overwhelming majority of advanced chips made in Taiwan, there needs to be a reality check that U.S. manufacturers can’t provide future chip production alone even with a big fab buildup contemplated in USICA’s $39 billion in grants. “No one should adopt the goal of decoupling from the global supply or reshoring or onshoring,” said Semiconductor Industry Association President John Neuffer in a [recent forum.](https://www.fierceelectronics.com/electronics/government-chip-aid-not-a-handout-commerce-official-says)

The creation of a new system of chip production more centered in the U.S. is going to take years, requiring a degree of humility on the part of super-competitive companies and some keen organizational skills by federal bureaucrats. Hopefully, this massive amount of work happens before China sets up a human settlement on the Moon or Mars and all that implies.

### 2nc – China is transparent

#### Chinese approach to AI is good-- they’re paving the way for transparency

Holland 22 - Makenzie Holland is a news writer covering big tech and federal regulation. Prior to joining TechTarget, she was a general reporter for the Wilmington StarNews and a crime and education reporter at the Wabash Plain Dealer. (Holland, Makenzie. “Experts See Positives to China's New AI Regulations.” SearchEnterpriseAI, TechTarget, 14 Mar. 2022, https://www.techtarget.com/searchenterpriseai/news/252514586/Experts-see-positives-to-Chinas-new-AI-regulations. )

China's new AI regulations tackle some of the most controversial elements of the technology, including algorithmic explainability and transparency -- something businesses will need to pay attention to, analysts said.

The AI regulations took effect March 1. They [require](https://www.forrester.com/blogs/navigate-chinas-new-data-and-ai-regulations/) AI algorithms that make recommendations to users to be moral, accountable and transparent, according to Guannan Lu, analyst at Forrester Research.

China's AI regulations prohibit algorithms from using personal data to change a product's price from one person to the next. Businesses will also be required to be transparent about the purpose of the algorithm they're using, such as for making product recommendations, according to a [translation](https://digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-effective-march-1-2022/) of China's AI regulations published by Stanford University.

China's new AI regulations are some of the most [ambitious AI regulations to](https://www.techtarget.com/searchenterpriseai/news/252465706/Gauging-the-right-amount-of-government-regulation-of-AI) date, said Alan Pelz-Sharpe, founder of research firm Deep Analysis.

"There are elements in here that other nations could learn from," Pelz-Sharpe said.

Though it may be "counterintuitive" to give China credit regarding its AI regulations given the political climate, Pelz-Sharpe said its rules "set a new benchmark that may drive improved regulations elsewhere."

The AI regulations outlaw algorithmic price gouging and require an explainable algorithmic decision-making process. The algorithms have to be "trustworthy AI," meaning built and tested to be as fair, explainable and bias-free as possible, Pelz-Sharpe said.

While there are discussions about [trustworthy AI](https://www.techtarget.com/searchenterpriseai/feature/Building-trustworthy-AI-is-key-for-enterprises) in areas such as Europe and the U.S., Pelz-Sharpe said there's little from a regulatory standpoint when it comes to defining the phrase. China, he said, is "making this concrete."

"Beyond blatant and deliberate misuse of AI, two of the biggest factors of concern for its use are bias and explainability," he said. "These regulations at least attempt to address some of these concerns."

Pelz-Sharpe said time will tell how well the AI regulations work and how enforceable they will be. But for now, there are good portions of the AI regulations for other countries drafting their own AI regulations to consider. Though the European Union has proposed draft AI regulations, the U.S. has not.

China's regulations provide a "blueprint for AI regulations elsewhere," Pelz-Sharpe said. Forrester's Lu  said China provides one example of the kinds of regulations that might be needed around the technology.

#### China Building ethical AI standards

Sheehan ’22 (Matt Sheehan--fellow at the Carnegie Endowment for International Peace, research focuses on global technology issues, with specialization in China’s artificial intelligence ecosystem, “China’s New AI Governance Initiatives Shouldn’t Be Ignored”, Carnegie Endowment for International Peace, 1/4/22) https://carnegieendowment.org/2022/01/04/china-s-new-ai-governance-initiatives-shouldn-t-be-ignored-pub-86127

Over the past six months, the Chinese government has rolled out a series of policy documents and public pronouncements that are finally putting meat on the bone of the country’s governance regime for artificial intelligence (AI). Given China’s track record of leveraging AI for mass surveillance, it’s tempting to view these initiatives as little more than a fig leaf to cover widespread abuses of human rights. But that response risks ignoring regulatory changes with major implications for global AI development and national security. Anyone who wants to compete against, cooperate with, or simply understand China’s AI ecosystem must examine these moves closely. These recent initiatives show the emergence of three different approaches to AI governance, each championed by a different branch of the Chinese bureaucracy, and each at a different level of maturity. Their backers also pack very different bureaucratic punches. It’s worth examining the three approaches and their backers, along with how they will both complement and compete with each other, to better understand where China’s AI governance is heading. The strongest and most immediately influential moves in AI governance have been made by the Cyberspace Administration of China (CAC), a relatively new but [very powerful](https://qz.com/2039292/how-did-chinas-top-internet-regulator-become-so-powerful/) regulator that writes the rules governing certain applications of AI. The CAC’s approach is the most mature, the most rule-based, and the most concerned with AI’s role in disseminating information. The CAC made headlines in August 2021 when it released a [draft set of thirty rules](https://digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-opinon-seeking-draft/) for regulating internet recommendation algorithms, the software powering everything from TikTok to news apps and search engines. Some of those rules are China-specific, such as the one stipulating that recommendation algorithms “vigorously disseminate positive energy.” But other provisions [break ground](https://digichina.stanford.edu/work/experts-examine-chinas-pioneering-draft-algorithm-regulations/) in ongoing international debates, such as the requirement that algorithm providers be able to “[give an explanation](https://digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-opinon-seeking-draft/)” and “remedy” situations in which algorithms have infringed on user rights and interests. If put into practice, these types of provisions could spur Chinese companies to experiment with new kinds of disclosure and methods for algorithmic interpretability, an [emerging but very immature](https://cset.georgetown.edu/publication/key-concepts-in-ai-safety-interpretability-in-machine-learning/) area of machine learning research. Soon after releasing its recommendation algorithm rules, the CAC came out with a much more ambitious effort: a [three-year road map](http://www.cac.gov.cn/2021-09/29/c_1634507915623047.htm) for governing all internet algorithms. Following through on that road map will require input from many of the nine regulators that co-signed the project, including the Ministry of Industry and Information Technology (MIIT). The second approach to AI governance has emerged out of the China Academy of Information and Communications Technology (CAICT), an [influential think tank under the MIIT](https://www.newamerica.org/cybersecurity-initiative/digichina/blog/profile-china-academy-information-and-communications-technology-caict/). Active in policy formulation and many aspects of technology testing and certification, the CAICT has distinguished its method through a focus on creating the tools for measuring and testing AI systems. This work remains in its infancy, both from technical and regulatory perspectives. But if successful, it could lay the foundations for China’s larger AI governance regime, ensuring that deployed systems are robust, reliable, and controllable. In July 2021, the CAICT teamed up with a research lab at the Chinese e-commerce giant JD to release the country’s first [white paper](https://cset.georgetown.edu/publication/white-paper-on-trustworthy-artificial-intelligence/) on “trustworthy AI.” Already popular in European and U.S. discussions, trustworthy AI refers to many of the more technical aspects of AI governance, such as testing systems for robustness, bias, and explainability. The way the CAICT defines trustworthy AI in its core principles [looks very similar](https://macropolo.org/beijing-approach-trustworthy-ai/?rp=m) to the definitions that have come out of U.S. and European institutions, but the paper was notable for how quickly those principles are being converted into concrete action. The CAICT [is working with](http://aiiaorg.cn/index.php?m=content&c=index&a=show&catid=34&id=115) China’s AI Industry Alliance, a government-sponsored industry body, to test and certify different kinds of AI systems. In November 2021, it issued its first batch of [trustworthy AI certifications](https://www.sohu.com/a/501708742_100207327) for facial recognition systems. Depending on the technical rigor of implementation, these types of certifications could help accelerate progress on algorithmic interpretability—or they could simply turn into a form of bureaucratic rent seeking. On policy impact, the CAICT is often viewed as representing the views of the powerful MIIT, but the MIIT’s leadership has yet to issue its own policy documents on trustworthy AI. Whether it does will be a strong indicator of the bureaucratic momentum behind this approach. Finally, the Ministry of Science and Technology (MOST) has taken the lightest of the three approaches to AI governance. Its highest-profile publications have focused on laying down ethical guidelines, relying on companies and researchers to supervise themselves in applying those principles to their work. In July 2021, MOST [published guidelines](http://www.most.gov.cn/tztg/202107/t20210728_176136.html) that called for universities, labs, and companies to set up internal review committees to oversee and adjudicate technology ethics issues. Two months later, the main AI expert committee operating under MOST released its own [set of ethical norms for AI](https://cset.georgetown.edu/publication/ethical-norms-for-new-generation-artificial-intelligence-released/), with a special focus on weaving ethics into the entire life cycle of development. Since then, MOST has been encouraging leading tech companies to establish their own ethics review committees and audit their own products. MOST’s approach is similar to those of international organizations such as the [United Nations Educational, Scientific and Cultural Organization](https://www.computerweekly.com/news/252510287/Unesco-member-states-adopt-AI-ethics-recommendation) and the [Organisation for Economic Co-operation and Development](https://oecd.ai/en/ai-principles), which have released AI principles and encouraged countries and companies to adopt them. But in the Chinese context, that tactic feels quite out of step with the country’s increasingly hands-on approach to technology governance, a disconnect that could undermine the impact of MOST’s efforts. One unanswered question is how these three approaches will fit together. Chinese ministries and administrative bodies are [notoriously competitive](https://sgp.fas.org/crs/row/R41007.pdf) with one another, constantly jostling to get their pet initiatives in front of the country’s central leadership in hopes that they become the chosen policies of the party-state. In this contest, the CAC’s approach appears to have the clear upper hand: It is the most mature, the most in tune with the regulatory zeitgeist, and it comes from the organization with the most bureaucratic heft. But its approach can’t succeed entirely on its own. The CAC requires that companies be able to explain how their recommendation algorithms function, and the tools or certifications for what constitutes explainable AI are likely to come from the CAICT. In addition, given the sprawling and rapidly evolving nature of the technology, many practical aspects of trustworthy AI will first surface in the MOST-inspired ethics committees of individual companies. The three-year road map for algorithmic governance offers a glimpse of some bureaucratic collaboration. Though the CAC is clearly the lead author, the document includes new references to algorithms being trustworthy and to companies setting up ethics review committees, additions likely made at the behest of the other two ministries. There may also be substantial shifts in bureaucratic power as AI governance expands to cover many industrial and social applications of AI. The CAC is traditionally an internet-focused regulator, and future regulations for autonomous vehicles or medical AI may create an opening for a ministry like the MIIT to seize the regulatory reins. The potential impact of these regulatory currents extends far beyond China. If the CAC follows through on certain requirements for algorithmic transparency and explainability, China will be running some of the world’s largest regulatory experiments on topics that European regulators have [long debated](https://www.law.ox.ac.uk/business-law-blog/blog/2018/05/rethinking-explainable-machines-next-chapter-gdprs-right-explanation). Whether Chinese companies are able to [meet these new demands](https://digichina.stanford.edu/work/experts-examine-chinas-pioneering-draft-algorithm-regulations/) could inform analogous debates in Europe over the right to explanation. On the security side, as AI systems are woven deeper into the fabrics of militaries around the world, governments want to ensure those systems are robust, reliable, and controllable for the sake of international stability. The CAICT’s current experiments in certifying AI systems are likely not game-ready for those kinds of high-stakes deployment decisions. But developing an early understanding of how Chinese institutions and technologists approach these questions could prove valuable for governments who may soon find themselves negotiating over aspects of autonomous weapons and arms controls. With 2022 marking [a major year](https://thediplomat.com/2020/12/china-looks-ahead-to-20th-party-congress-in-2022/) in the Chinese political calendar, the people and bureaucracies building out Chinese AI governance are likely to continue jostling for position and influence. The results of that jostling warrant close attention from AI experts and China watchers. If China’s attempts to rein in algorithms prove successful, they could imbue these approaches with a kind of technological and regulatory soft power that shapes AI governance regimes around the globe. End of document

#### China approves new digital AI regulation

**Fattal and Tene ’22** (Joshua r. Fattal is an associate in Technology group Business Law Deparment firm, and member of firms Data, Privacy, and Cybersecurity, “China Passes Extensive Regulations Governing Artificial Intelligence Algorithms”, Goodwin Data, Privacy + Cybersecurity insights, 1/28/22) <https://www.goodwinprivacyblog.com/2022/01/28/china-passes-extensive-regulations-governing-artificial-intelligence-algorithms/>

The Cybersecurity Administration of China **(CAC),** China’s data protection and cybersecurity watchdog, recently passed the [final text](http://www.cac.gov.cn/2022-01/04/c_1642894606364259.htm) of the Internet Information Service Algorithm Recommendation Management Regulations, an extensive set of rules – one of the most fully developed artificial intelligence (AI) regulations in the world – designed to govern the use of AI-based recommendation algorithms. From [ByteDance](https://www.bytedance.com/en/) to [Tencent Holdings](https://www.tencent.com/en-us), companies in China and beyond are using recommendation algorithms as one of the most [widespread types](https://digichina.stanford.edu/work/experts-examine-chinas-pioneering-draft-algorithm-regulations/) of AI in use today. The new regulations, which were published along with a series of related [FAQs for journalists](http://www.cac.gov.cn/2022-01/04/c_1642894606594726.htm), are a part of China’s ongoing efforts to regulate technology platforms in contexts ranging from securities regulation and competition to data security and privacy. When implemented, the regulations will have a major impact on companies relying on recommendation algorithms both inside and outside China. The regulations, based off a draft promulgated this past summer, clearly state their goal, to “carry forward the Socialist core value view, safeguard national security and the social and public interest.” They apply to “algorithmic recommendation service providers” – i.e., companies that use algorithmic technologies to “provide information to users,” such as app operators who use algorithmic recommendations in their platforms. The regulations require these providers to “uphold mainstream value orientations, optimize algorithmic recommendation service mechanisms, vigorously disseminate positive energy, and advance the use of algorithm upwards and in the direction of good.” The regulations set out a number of principles that are designed to guide the activity of algorithmic recommendation service providers. Such providers must: take “measures to prevent and curb the dissemination of harmful information” including the generation of “fake news”; avoid setting up algorithmic models that “violate laws and regulations or ethics and morals, such as by leading users to addiction or excessive consumption;” and not carry out “monopolistic or improper competition acts.” Under the regulations, providers must immediately halt the spread of any illegal information that they discover, effectively placing responsibility for content moderation on platforms that, in the U.S., would be [immune](https://www.eff.org/issues/cda230) from civil liability under Section 230 of the Communications Decency Act. Providers must not only take corrective actions when illegal information is discovered, but also report any such discovery to the CAC. Algorithm providers are further instructed to offer a series of features designed to protect user rights, including notifying users in a clear manner about the basic principles, purposes and operational mechanisms of an algorithm; providing users with a choice “to not target certain of their individual characteristics”; and installing “convenient and efficient user complaint and public complaint and reporting access points.” To afford users these rights, developers may need to create an interface where users can view their profiles and actively select and remove keywords used by the recommendation algorithm, to test alternative outcomes. This would be a first for any regulation of algorithms anywhere in the world. The regulations also contain specific requirements for services that are provided to minors, stating that algorithm providers may not provide minors with information that may incite the imitation of unsafe conduct or lead to “online addiction.” Moreover, the regulations require that providers of algorithm recommendation services to the elderly must consider the “elderly’s requirement in going out, undergoing medical treatment, consumption, handling affairs, etc.” The regulations also acknowledge labor rights, specifying that providers of algorithm recommendation services to workers must guarantee workers’ legal rights and interests, such as renumeration, rest, and vacation. Individuals or organizations that discover activities that violate these provisions may file a complaint or report with the government. Relevant government departments may issue a warning or report and order rectification within a limited time. The government may impose a fine of between 10,000 and 100,000 yuan (between $1,570 and $15,700, amounts that have doubled since the draft regulations) if the violations are not corrected or the circumstances are “grave.” Violations may also be prosecuted with criminal liability. Like the [recently passed](https://iapp.org/news/a/chinas-pipl-takes-effect-compliance-a-challenge/) Personal Information Protection Law (PIPL), which came into force last November – less than three months after it passed in the National People’s Congress – the regulations will take effect shortly after they were published, on March 1, 2022. In light of this looming deadline, companies that rely on algorithms for content recommendations and targeted advertising, as well as the platforms that provide these services, should begin to consider how the regulations might affect their business. Companies that operate both in China and overseas may have to pursue a dual-tracked approach, ensuring that their Chinese operations comply with the regulations while maintaining another set of services that align with other countries’ approaches. Nonetheless, h ow these regulations are enforced and how companies adapt to their terms will likely affect the global AI ecosystem.

**AFF**

### 2ac – AT: Democracy !

**The DoD has ethical principle adopted.**

**DoD 20**, The US DoD is the primary defense sector of the US military, 2-24-2020, “DOD Adopts Ethical Principles for Artificial Intelligence,” <https://www.defense.gov/News/Releases/Release/Article/2091996/dod-adopts-ethical-principles-for-artificial-intelligence/>, oj

The U.S. Department of Defense officially adopted a series of ethical principles for the use of Artificial Intelligence today following recommendations provided to Secretary of Defense Dr. Mark T. Esper by the Defense Innovation Board last October.

#### US sets to promote AI technologies to restore democracy – at the same time aiming for innovations protecting costumer privacy

Matthews 21 - [David Matthews is the international editor of Science|Business, covering science and technology policy across the world. In addition, he also write on a freelance basis, focusing on technology, virtual reality in particular. I’ve written for outlets including Nature, The Guardian, The Register, UploadVR and the British Journalism Review., 12-7-2021, "US to push ‘democracy-affirming technology’ with prizes and research projects," Science|Business, <https://sciencebusiness.net/news/us-push-democracy-affirming-technology-prizes-and-research-projects> /kch]

The US is set to fund prizes, challenges and research projects to create so-called “**democracy affirming technologies**” that allow open societies to reap the benefits of innovation **without sacrificing privacy or** **accountability**. The initiative will be launched this week at the virtual Summit for Democracy, a meeting of 111 invited countries convened by president Joe Biden in an **attempt to “renew” democracy.** Examples of democracy affirming technologies include methods of machine learning that respect the privacy of individuals, or alternatives to what the US sees as the compulsory genomic surveillance of populations.“We’re really interested in ways we could spur innovation and pioneer a new class of technologies,” Tarun Chhabra, senior director for technology and national security of the US National Security Council told the virtual conference, ‘Technology in and for Society’, hosted by the OECD. These technologies should “advance the values of privacy, **transparency**, accountability and access to information” he said, setting out the objectives of the programme on Monday, in advance of the Summit on 9 and 10 December.The US wants to set up prizes, challenges and pilot projects “with likeminded countries” in order to “build a future where we can really accelerate the development of technologies,” Chhabra said.

Untested proposition

The concept of democracy-affirming technology will be launched with a panel discussion at the Summit for Democracy on 8 December. “It’s an untested proposition whether technologies built with democratic values at their core —'democracy-affirming technology’ — can be as powerful, profitable, or even as entertaining as those which threaten to undermine rules-based governance today,” reads the event description, which will focus on technology that can “**asymmetrically advantage democratic values**”. Pressed for more examples of such technologies, Chhabra said that the US has concerns about the way in which “some biotechnologies are being used for mass and compulsory genomic surveillance” with “very uncertain policies around how that data may be used.” Democracies need to create alternatives that allow societies to reap the health benefits of genomic technology, but without the surveillance downsides, he said. The US hopes to “show what the potential of that kind of technology could be, and work with industry to ensure trying to develop it, and then work through associated challenges related to standards,” he said. The concept of democracy-affirming technology is a relatively new and unused one, but the term does appear in a report released last year by the Alliance for Securing Democracy, a task force of US experts convened to formulate a strategy to “offset autocratic advances in non-military domains of competition”. “The US should work with other democracies to take a more active role in **shaping global technology governance** to ensure that norms, standards, and new technologies are conducive to democracy rather than corrosive to it,” concludes Linking Values and Strategy. It mentions “explainable and low data **artificial intelligence**” as one such technology **democracies should pursue**. There should also be “guardrails” on applications that might threaten democratic values, like facial recognition, mass data collection, and surveillance technologies, the report says. It also makes the case for more state intervention in technology development, so that new breakthroughs bolster, rather than undermine, democracy. “A hands-off approach to technology governance has made it easier for autocracies to shape standards and norms,” it warns. Apart from promoting democracy-affirming technology at this week’s summit, the US will also rachet up export controls on technologies that could undermine democracy.

Over the coming year, said Chhabra, the US wants to assemble a group of “likeminded” countries that will “commit together to determine how export control tools could better monitor, and as appropriate restrict, the proliferation of technologies.” He said there was a “broader surveillance stack” of technologies that are “of concern”. Drawing up the guest list for the summit has proven controversial, however. To China’s anger, Taiwan has been invited. Hungary is not on the guest list, but Poland is, despite the country’s ongoing rule of law disputes with Brussels. On December 8, the White House announced further details of the agenda, unveiling a series of “International Grand Challenges on Democracy-Affirming Technologies”. These will include prize challenges to develop privacy-enhancing technologies that “**harness the power of data** in a secure manner that **protects privacy and intellectual property,** enabling cross-border and cross-sector collaboration to solve shared challenges.”. They will be run jointly by the US and UK. Also supported will be challenges to create tools that can circumvent online censorship and get around internet shutdowns. “It’s not a guarantee that any given technology will support democratic values,” said Eric Lander, president Biden’s science advisor in a statement. “It takes constant vigilance, and constant commitment; we, the people, have to make sure that technology is developed responsibly and used responsibly. That is our solemn obligation.”

**US-led AI innovation influence numerous fields positively rather than fostering authoritarianism**

**Castro, McLaghlin and Chivot 19 –** [Daniel Castro is the director of the Center for Data Innovation and vice president of the Information Technology and Innovation Foundation, Michael McLaughlin is a research analyst at the Center for Data Innovation specialized in data journalism; and Eline Chivot is a former senior policy analyst at the Center for Data Innovation and worked at one of Brussels’ largest trade associations and managed its relations with representatives of the digital tech industry in Europe and beyond. 8-19-2019, "Who Is Winning the AI Race: China, the EU or the United States?," Center for Data Innovation, https://datainnovation.org/2019/08/who-is-winning-the-ai-race-china-the-eu-or-the-united-states/]

A sneak peek of Joe Biden's national AI strategy: here's what to expect

"Continued American leadership in AI is of paramount importance to maintaining the economic and national security of the United States and to shaping the global evolution of AI in a manner consistent with our Nation's values, policies, and priorities." President Donald J. Trump, February 11, 2019. Although the Trump administration launched the first-ever national AI strategy a few years earlier, it was not until Joe Biden took office that federal AI spending reached historic high. Through 2021, Washington could invest $6 billion into AI-related R&D projects and initiatives. The country's renewed interest in artificial intelligence is largely ignited by Biden's plan to challenge China and its views on AI usage. In the spring of 2022, the National Artificial Intelligence Research Task Force is set to present an interim report highlighting the national artificial intelligence strategy and implementation plan, with the full report expected later that year. Experts believe that the US AI strategy will cover complex scientific, economic, social, and security issues of artificial intelligence and the associated technologies, such as data storage and processing platforms.

The government wants America to lead the artificial intelligence race

A 2020 AI survey conducted by RELX indicates that 82% of Americans "are somewhat or very concerned" about other countries being more advanced in AI than the United States. And there's no smoke without fire. Although the United States is still leading the artificial intelligence race, China boasts superior monitoring and surveillance technologies, which are often used to suppress its citizens and control other countries' information flows. Instead of strengthening authoritarianism, US companies and governmental agencies are focused on the commercial applications of artificial intelligence. Simply put, America would rather have advanced self-driving vehicles than an AI-powered version of Orwell's Big Brother. And Biden's national AI strategy will most likely become a counterpoint to how China believes the technology should be used. Several steps have already been taken in this direction. The US National Security Commission on Artificial Intelligence (NSCAI), an independent organization established in 2018 to spur artificial intelligence development in the country, urges the government to form strategic partnerships with private companies and fellow democracies. In addition, NSCAI believes the new administration needs to allot $40 billion to further expand and democratize R&D activities in the AI field. The US government is also looking to establish a Technology Competitiveness Council to create national strategies for seven emerging technologies, including artificial intelligence. In particular, US officials are interested in leveraging AI to prevent the malicious use of biotechnology, including genomic weapons. In light of Biden's decision to order a new investigation into the origins of COVID-19 — some theories suggest that the virus was created in a laboratory and released through an accidental leak — the country's priorities do not come as a surprise.

**US leadership is essential in maintaining positive AI innovation—preventing human rights violations and adversarial applications.**

**Omaar 20** [Hodan Omaar is a senior policy analyst at the Center for Data Innovation focusing on AI policy. Previously, she worked as a senior consultant on technology and risk management in London and as a crypto-economist in Berlin. She has an MA in Economics and Mathematics from the University of Edinburgh. 7-17-2020, "U.S. Global Leadership on AI a Welcome Development," Center for Data Innovation, https://datainnovation.org/2020/07/u-s-global-leadership-on-ai-a-welcome-development/]

The U.S. government announced on May 27 that it was joining the Global Partnership on AI (GPAI), a group launched by the G7 to provide cooperation between nations on artificial intelligence. This is a sharp change of course for the United States which had held out on joining the group initially out of concern that its European allies would use the forum to push for aggressive regulation of the technology without clear evidence of harms. Instead, the group is now set up to focus on the responsible development of AI, including by developing research agendas, promoting AI workforce development, and spurring AI innovation and commercialization, while ensuring these uses align with shared democratic values. The U.S. presence on the global stage in AI policy is a welcome step because it provides an alternative to the two dominant views. On one side is China, which has made bold commitments in its national AI strategy to leverage the technology across its entire economy and use this to be more competitive economically and militarily. However, many are concerned that China’s authoritarian government will also abuse the technology to infringe on human rights, including by monitoring dissidents and minority communities. On the other side is the EU, which has embraced the precautionary principle and wants to strictly regulate the use of AI because of fears that the technology will otherwise be used for harmful purposes.

The United States presents an alternative view—unlike China it wants to protect democratic values, and unlike the EU it wants to proceed without an overly burdensome regulatory regime. U.S. leadership on digital policy issues has always been important. For example, in the 1990s the U.S. government championed the multistakeholder approach to Internet governance, creating a balance between the different needs of government, commercial, and civil society stakeholders. For many years, the U.S. government has backed a free and open Internet, helping to resist efforts by other countries to censor content online and impose data localization requirements. Today, the AI economy needs such advocacy even more, as its expansion and evolution depends on the ability of technology firms to operate across borders. For instance, the EU’s data laws that restrict algorithmic decision making inhibit firms from selling AI products and services that automate many processes. The United States could influence its other trading partners to avoid adopting such harmful policies by advancing a light-touch regulatory framework that instead fosters algorithmic accountability. Forums like GPAI present an opportunity for the United States to demonstrate that regulations should be adopted only where they are necessary and only targeting specific harms in particular application areas. This approach will allow for more rapid adoption of AI and faster economic and social progress. Working with other countries to address issues arising from the misuse of AI products will serve the United States well at home too. For example, in response to the flagrant abuse of facial recognition technology in China to target the predominantly Muslim Uighur minority, the United States could engage its geopolitical partners to share resources, expertise, and best practices on establishing global norms on ethical uses of AI. By establishing proper guardrails, rather than enacting misguided bans or innovation-hampering regulation, the United States can prevent consumer backlash that impedes the growth of beneficial AI technologies. Establishing such consensus with allied nations is particularly important in balancing global power dynamics in AI development. Chinese government officials and the country’s industry leaders made it clear in their call for stronger global collaboration in AI this month, that they intend to strengthen their ties with other AI leaders. By joining GPAI, the United States is strengthening its own alliance with like-minded democratic partners, and providing a counterweight to China’s growing economic and political power. Beyond protecting against threats to U.S. economic and national security, GPAI also provides an opportunity for the United States to ensure American values, rather than Chinese ones, prevail on the global scale. There are more commonalities in values and principles among the G7 group than there are divergences, and the United States is correct in thinking that promoting these values—including diversity, inclusion, and civil liberties— is stronger when coordinated. Working together, the group will support the development of AI that integrates shared democratic values and can ultimately ensure these values supersede those of China and other autocratic countries. GPAI is still in the early days of establishing international cooperation, but the United States’ involvement is an encouraging step towards achieving its vision of economic growth, competitive advantage, and social progress.

**Spread of Chinese AI leadership would undermine international human rights and target towards minorities**

**CFDS 19** [Center for Digital Society (CfDS) is a research center under the Faculty of Social and Political Sciences, University of Gadjah Mada. 7-11-2019, "China: Where Technology Threatens Human Rights : Center for Digital Society”, https://webcache.googleusercontent.com/search?q=cache:OFE85dMbys8J:https://cfds.fisipol.ugm.ac.id/2019/07/11/china-where-technology-threatens-human-rights/+&cd=12&hl=en&ct=clnk&gl=tw]

China’s rate of technological advancement has been one of the highest in the world. Currently, it is on the 3rd rank of AI ecosystem development[1]. Moreover, the government even already set the target to be the world’s AI leader by 2030, tackling the US technological leadership[2]. This goal was established to maximize the advantages that technology has and will bring towards China, mainly on economic development. However, as many have argued, the Chinese model could succeed because it could maintain the stability of the country by repressing the citi[an1] [TA2] [TA3] zen’s rights through the central planning system. As a result, the government is not hesitant to utilize technology to preserve the balance of the government. Thus, this has also increased international concerns. This commentary will discuss the reasons behind these concerns.

China’s Mass Surveillance Application

In February 2018, Human Rights Watch found out that an application named IJOP is used by authorities to gather citizen’s data and behavior including the ability to create alerts towards the government if the application algorithm deemed the person to be threatening and required further investigation. One of the usage of IJOP is towards the minorities in China such as the Turkic Muslims and ethnic Uyghurs in Xinjiang. Even before IJOP, these groups have been exposed to various measures of detention to integrate them towards the society including in the prohibition of massively expressing their beliefs or identities in public[3]. Some of the actions and behaviors that are considered suspicious by the algorithm are the usage of VPN or other banned applications in China, the conduct of religious practices without government consent, the usage of electricity surpasses the typical usage, the possession of a mobile phone that is not registered, etc. These data are manually inputted to the system by officers who interview citizens. Besides manual data input, the application could also gather data from Wi-Fi networks. After processing the data, IJOP could create alerts and assigns different police levels which citizens they must interrogate or bring to political detention[4].

China’s Social Rating System

The social rating system in China aims to maintain harmony in the society and ensuring the citizens to behave appropriately by incentivizing good behavior while penalizing the bad. Taking the data from private companies, CCTV, government records, and so forth, the social rating system gives an ID to a person, and they will be scored based on their behavior. For example, if someone violates specific laws such as not paying government money or disturb society by being too loud in public, they could lose some of their rights. There are v[an4] [TA5] [an6] arious pilot projects of this social rating system with different lists of good and bad behavior, along with the associated rewards and punishment[5].

Conclusion

Although both applications are not yet nationally used in China, they already show significant violations towards human rights, mainly towards the rights of privacy and the presumption of innocence unless proven otherwise. In both systems, the algorithm becomes the deciding factor for whether a person should be penalized or not. These contradict the principles underlying the international human rights treaties that China has agreed such as the International Convention on the Elimination of All Forms of Racial Discrimination[6]. Both cases have shown how technology could massively be used to secure society at the expense of their human rights. Although this happened in China that most labeled for not being under democracy, everyone has the same human rights regardless of their nationality. Therefore, they have the absolute right to be protected. Moreover, prevention of the adoption of such a system in other countries must be done as actually the social credit system has been implemented in banks and other institutions but not as detailed as the Chinese case[7]. All in all, the case of China rises concerns towards the international human rights treaties in order to adapt and enforce human rights both offline and online.

#### The AI “arms race”—US much address China’s growing AI

**Sherman ’19** (Justin Sherman work at the Atlantic Council focuses on the geopolitics, governance, and security of the global internet. He was a cybersecurity policy fellow at New America, “Why This Framing is Not Only Wrong, But Dangerous for American Policymaking,” New America Cybersecurity initiative, 3/6/19, chapter one) https://www.newamerica.org/cybersecurity-initiative/reports/essay-reframing-the-us-china-ai-arms-race/

China is going to develop superior artificial intelligence and take over the world, it seems—at least if one listens to what many commentators have been shouting from the rooftops. Indeed, over the past year, American security analysts, policymakers, and journalists alike have increasingly used a Cold War-era analogy to describe issues around the development of artificial intelligence (AI)—specifically characterizing the state of U.S.-China technological competition as an “AI arms race,”1 whereby the United States and China are presumably locked in competition for artificial intelligence hegemony.2 “Ultimately, we will win the race for AI,” President Trump’s Deputy Assistant for Technology Policy Michael Kratsios recently wrote.3 Talk of U.S.-China “algorithm battles” even made it into a 2018 U.S. National Security Council memo.4 Here, the framing is clearly winner-takes-all: One nation will reap the benefits of artificial intelligence, in fashions as wide-ranging as accelerated economic growth and enhanced military capability, while the other loses out and faces defeat. But this framing of artificial intelligence is not only wrong, it’s dangerous, and it seriously hampers the ways in which American policymakers approach the management of China’s technological rise and the development of artificial intelligence within our country. The United States needs to quickly address China’s growing AI development; artificial intelligence will have important influence over the balance of international power5 and the future world order6 —but, as this report will address, a winner-takes-all arms race framing is not the appropriate lens through which to view this strategic threat. The first chapter argues why this winner-takes-all arms race framing treats AI development as if it occurs in vacuums within the United States and China. By ignoring the interconnection and interdependence of the sectors between the two countries, this framing causes American policymakers to overlook the many mutual benefits that could arise from the furthering of global artificial intelligence capabilities. As a result, policymakers in the United States risk causing damage to AI development, missing opportunities, and mishandling AI risks—when they should focus on engaging with China on AI projects without giving up critical expertise or technologies that could potentially enhance harmful applications of artificial intelligence. The second chapter argues why this framing incorrectly treats artificial intelligence like one technology, rather than a catch-all term that alludes to a variety of technologies. This is blatantly wrong and overlooks the varying speeds and mechanisms of AI’s development in different application areas. Once again, American policymakers may mishandle AI risks and miss out on AI upsides as a result.

#### **AI researches carried out by the Chinese government lacks ethical standards and oversight**

Belot 21 – [Henry Belot is a political reporter in the ABC's Parliament House bureau in Canberra. He has previously worked for The Canberra Times covering the federal public service. Henry has a masters degree from the University of Melbourne and has studied international security. He was a finalist in the 2016 Walkley Young Journalist of the Year Awards. 9-15-2021, "Curtin University lobbies for retraction of unethical AI study on Uyghur facial recognition," abc news, <https://www.abc.net.au/news/2021-09-15/curtin-university-lobby-remove-unethical-uyghur-ai-study/100463996> /kch]

An internal review of research by Associate Professor Wan-Quan Liu – who has since resigned and now works at a university in China – found he breached several ethical codes including a failure to obtain informed consent and approval. The study, first reported by Four Corners in 2019, was partly **funded by the Chinese government** and was **criticised by human rights campaigners** who were worried it could be misused by authorities to **persecute Uyghurs in Xinjiang.** The paper remains online despite Curtin University's deputy vice-chancellor, Professor Chris Moran, repeatedly urging publisher Wiley for it to be retracted, along with any reference to the university immediately removed. The chair of Federal Parliament's intelligence and security committee, Senator James Paterson, praised Curtin University for taking the issue seriously but said he remained concerned about the breaches. "It does raise troubling questions about how this research was allowed to be conducted in the first place and why it went **undetected** for so long," he told the ABC. "It is alarming to think an Australian university was involved with research that can so clearly be **used for profoundly unethical purposes**." Letters seen by the ABC and first reported by US website IPVM show the university has had success in lobbying other publishers, including the IEEE Open Journal of the Computer Society, to retract subsequent studies that are based on the data obtained during initial research. In a statement, publisher Wiley told the ABC it was now reconsidering its decision to keep the article online. "WIREs Data Mining and Knowledge Discovery has previously launched an investigation in accordance with the Committee on Publication Ethics (COPE) guidelines, which resulted in a Publisher's Note and an Expression of Concern," a spokesperson told the ABC. "We take every concern seriously and are reviewing the matter again taking into account the new information provided by Curtin University."In a statement, a Curtin University spokesperson said the research was undertaken informally without its knowledge and that oversight had since been strengthened. "Curtin has established a new risk-based framework and guidelines to deal with informal research activities," the spokesman said. "This is part of Curtin's ongoing commitment to ensuring that we innovate in an ethical and responsible way as developing and managing the world's technologies becomes increasingly complex. "The framework is supported by an emphasis on ensuring academics maintain a current disclosure/registration of interests statement with the university." A letter from Professor Chris Moran to a concerned academic in August said the university found Dr Liu "**did not gain the required ethical approvals**" and "**did not gain informed consent**". Allegations of foreign interference in Australian universities is currently being considered by Parliament's intelligence and security committee. The ABC has contacted publisher Wiley and Dr Liu for comment.

### 2ac – Democracy ! Defense

#### Covid thumps democracy and they can’t overcome it

Repucci and Slipowitz 20 – Amy Slipowitz is the Research Manager for Freedom in the World, Freedom House’s flagship annual report assessing the condition of political rights and civil liberties around the world. Sarah Repucci is vice-president of research and analysis at Freedom House. ( Repucci, Sarah, and Amy Slipowitz. “Democracy under Lockdown.” Freedom House, 2020, https://freedomhouse.org/report/special-report/2020/democracy-under-lockdown. )

The COVID-19 pandemic has fueled a crisis for democracy around the world. Since the coronavirus outbreak began, the condition of democracy and human rights has grown worse in 80 countries. Governments have responded by engaging in abuses of power, silencing their critics, and weakening or shuttering important institutions, often undermining the very systems of accountability needed to protect public health.

This is the conclusion of new Freedom House research on the impact of COVID-19 on democracy and human rights, produced in partnership with the survey firm GQR. Based on a survey of 398 journalists, civil society workers, activists, and other experts as well as research on 192 countries by Freedom House’s global network of analysts, this report is the first of its kind and the most in-depth effort to date to examine the condition of democracy during the pandemic (see full methodology).

The research strongly supports the hypothesis that the COVID-19 pandemic is exacerbating the 14 years of consecutive decline in freedom. Not only has democracy weakened in 80 countries, but the problem is particularly acute in struggling democracies and highly repressive states—in other words, settings that already had weak safeguards against abuse of power are suffering the most. The findings illustrate the breadth and depth of the assault on democracy. As one respondent on Cambodia put it, “The government [took] coronavirus as the opportunity to demolish democratic space.”

Sri Lanka’s experience illustrates the global trends. The government of Prime Minister Mahinda Rajapaksa accelerated its authoritarian agenda over the past six months, stepping up efforts to control independent reporting and unfavorable speech by ordering the arrest of anyone who criticizes or contradicts the official line on the coronavirus. Early elections were called but, as the outbreak accelerated, were postponed, leaving the national legislature out of session beyond the constitutional deadline and weakening checks on executive power. Health concerns were also exploited by authorities as a pretext for human rights abuses, especially against the minority Muslim population.

The crisis of democratic governance, having begun long before the pandemic, is likely to continue after the health crisis recedes, as the laws and norms being put in place now will be difficult to reverse. Among the experts surveyed, 64 percent agreed that the impact of COVID-19 on democracy and human rights in their country of focus will be mostly negative over the next three to five years. China’s experience over the past nine months could prove a dystopian model for the future: increased nationalist and propagandistic rhetoric at home in an effort to drown out calls for transparency and accountability, enhanced and innovative technological surveillance, crackdowns on individuals within and outside the country who share information that contradicts regime messaging, and the persecution of potential critics among the domestic elite.

Yet even amid devastation and disruption, some have responded to the pandemic with hope and rejuvenation. Journalism has thrived in certain countries as people seek out factual information, and investigative reporting has persisted in several of the most hostile environments. As one expert on Cuba said, “Activists and independent journalists have been willing to risk fines and imprisonment to report accurately on what is taking place in the country.” Civil society organizations have also worked tirelessly to maintain accountability in face of new challenges. And the mishandling of the crisis by many governments has spurred demands for change, most notably in Belarus, where mass protests that began in August have blossomed into a major movement for political reform. Democracy is suffering around the world, but the public’s demand for it has not been extinguished.

"Democracy is suffering around the world, but the public’s demand for it has not been extinguished."

The following report summarizes the results of Freedom House’s research into the impact of COVID-19 on democracy and human rights from January to August 2020. It describes five aspects of accountability that have been weakened: checks against abuses of power, protection of vulnerable groups, transparency and anticorruption, free media and expression, and credible elections. It concludes with a summary of the reasons for hope and a set of recommendations, along with the report methodology.

Among survey respondents, 27 percent reported government abuse of power as one of the three issues most affected by the coronavirus outbreak. Officials and security services perpetrated violence against civilians, detained people without justification, and overstepped their legal authority. Governments are also using the pandemic as a justification to grant themselves special powers beyond what is reasonably necessary to protect public health. They have then exploited these emergency powers to interfere in the justice system, impose unprecedented restrictions on political opponents, and undermine crucial legislative functions. As one respondent said of Turkey, “Coronavirus was used as an excuse for the already oppressive government to do things that it has long planned to do, but had not been able to.”

Freedom House research found evidence of police violence against civilians in at least 59 countries. Most of the violence occurred in less democratic settings, with 49 percent of Partly Free countries and 41 percent of Not Free countries under review experiencing such abuses.[1](https://freedomhouse.org/report/special-report/2020/democracy-under-lockdown#footnote1_4i3fctf)  Detentions and arrests linked to the pandemic response were noted in at least 66 countries, including 49 percent of Partly Free countries and 54 percent of Not Free countries. In Egypt, classified as Not Free, one expert noted, “The military regime has used COVID-19 as an opportunity to further repress political activists, rights defenders, lawyers, journalists, and doctors, arresting dozens, denying them basic assistance in places of detention, and placing several on terrorist lists.”

The high rates of abuse by authorities in Partly Free countries likely indicate that governments with both a relatively active opposition and weak checks on their own power perceive a greater need and opportunity to resort to violence. One Partly Free country, Liberia, experienced “brutal and corrupt enforcement of curfew orders by security forces.” In another, Zimbabwe, “COVID-19 has also been used to arrest, abduct, rape, assault, and intimidate human rights activists, opposition party leaders/supporters, civil society leaders, journalists, and other dissenting voices on ‘allegations of violating lockdown conditions.’”

Surveillance has greatly increased during the pandemic, and broad monitoring can easily become excessive and intimidating. For example, a respondent on the Philippines reported that authorities have visited the homes of individuals who may have been exposed to the virus, and arrests are frequently carried out for violations as simple as not wearing a mask while crossing a border. In Sri Lanka, a survey respondent described the “house-to-house collection of household-level information by the police, accompanied by military intelligence.”

Many experts also detailed crackdowns on opposition figures or the judiciary. In Kazakhstan, “there is an increase in the persecution of civic activists and political opposition for expressing their critical opinions on social media or disseminating information about human rights violations, including through the initiation of criminal cases.” In Cambodia, “[Prime Minister] Hun Sen’s government has used COVID-19 to bolster its crackdown on the political opposition.” In Azerbaijan, “the government has used the pretext of breaking quarantine to crack down on opposition political activists.” In Guatemala, the “pandemic has been utilized to continue attacks against the rule of law. The country is in the process of electing magistrates to [the] highest courts and corrupt and criminal groups are looking to rig the process.” In Serbia, “the judiciary has become a puppet of the executive branch, trials are being…conducted via video link, without the presence of defense attorneys.”

At the same time, parliaments have been hamstrung by health restrictions and emergency laws, and at times manipulated for political purposes. One respondent on Singapore noted that the most disturbing development has been the “passage of laws that curb freedom but claim to curb the virus.” Almost 4 in 10 (39 percent) of the surveyed experts, representing 65 countries, said meetings of the national legislature were canceled for at least part of the pandemic.

Such abuses may reflect a government’s fear of losing power, rather than confidence in its own strength. Overall, 57 percent of respondents felt that governing parties in their country of focus have grown weaker since the start of the coronavirus outbreak, compared with only 27 percent who believe they are stronger. In the countries where democracy was seen as weakening this year, experts were likely—by a margin of 6 percentage points—to see governing parties in a stronger position, as in Bangladesh, Burundi, Poland, and Sri Lanka. However, this apparent “bump” for governing parties in democratically declining countries represents only a fraction of the gains enjoyed by governing parties in better-performing countries where there are high rates of approval for the national government’s response to the coronavirus, or where the economy is strong, such as Estonia.

The survey findings highlighted two countries that are not long-standing democracies yet have resisted imposing widely abusive measures in response to the coronavirus outbreak. The 10 experts who responded to the survey on Tunisia, which became a Free country in Freedom in the World 2015, all expressed approval of the national government’s handling of the outbreak. At the time of this writing, virus cases were on the rise, and there have been reports of police abuse and arbitrary enforcement of lockdown measures, but officials have refrained from serious infringements on fundamental freedoms. In Georgia, which remains a Partly Free country, the government has been widely commended among the population for imposing strict, but transparent, measures to tackle the pandemic. Georgia has had one of the lowest death rates globally, resulting in a significant popularity boost for the ruling Georgian Dream party ahead of October elections. These cases are a reminder that any country can take steps to manage health risks while respecting human rights.

Abuses of power during the pandemic have had a disproportionate impact on communities that were already marginalized. Among the experts surveyed, 29 percent said a lack of protection for minorities and vulnerable populations was one of three issues most affected by the coronavirus response; 25 percent said new or increased restrictions on ethnic and religious minorities have been put in place as a result of the coronavirus outbreak in their countries of focus. In some cases, these groups suffered disproportionately because their status put them at greater risk. But the dearth of accountability precipitated by weakened independent media or acquiescent legislative and judicial branches has allowed both state and nonstate actors to discriminate against certain groups with impunity.

In some countries, lockdown measures have been applied in an openly discriminatory manner to specific segments of the population. In Bulgaria, Romany neighborhoods were placed under harsher movement restrictions than areas where Roma did not constitute a majority. In Kuwait, authorities put greater restrictions on noncitizen neighborhoods than on areas where mostly citizens live. Criminal and rebel groups have also used the pandemic as a pretext to prey on marginalized communities. In Colombia, according to a survey respondent, “ethnic minorities had to completely withdraw into their shelters to protect themselves from the virus and with that they found themselves at the mercy of…illegal armed groups.”

Marginalized groups have faced disproportionate sanctions. In the United Kingdom, news media have reported that Black people and people of Asian descent are detained at higher rates than white residents under new police powers. In Turkey, a respondent claimed that “police violence under the cover of COVID-19 audits and checks disproportionately targets minorities.”

"The military has intensified attacks in ethnic areas related to less international scrutiny due to coronavirus.”

Governments and societies have continued to use marginalized groups as scapegoats, blaming them for spreading the virus. India’s Muslims were labeled “superspreaders” and subjected to “a vicious hate campaign” in response to news of an Islamic religious gathering in New Delhi that was linked to an outbreak of COVID-19. Similarly, in Sri Lanka, “Muslims were treated as superspreaders with some members of government blaming Muslims for people not being able to celebrate the Sinhala and Tamil New Year,” and “the media would highlight cases where the patients were of a minority community.” Moreover, against their religious customs and despite World Health Organization recommendations stating that burials were acceptable, Sri Lankan Muslims were ordered to cremate those in their community who died after contracting the virus. In Montenegro, “the government and its media used the opportunity to label any religious protest gatherings, especially those of the members of the Serbian Orthodox Church, as reckless if not outright intentional attempts to spread the coronavirus and undermine the ruling regime.”

In Costa Rica, already marginalized Nicaraguan migrants and refugees who work in the agricultural sector are reportedly viewed by many as contributing to the spread of COVID-19. In Serbia, “the anti-migrant atmosphere has grown…as migrants were portrayed as possible carriers of the virus.” A respondent on Turkey noted that “the declaration by [the] Directorate of Religious Affairs [said] that the LGBTI+ individuals are responsible for spreading the virus around the world as the damned group by God.”

Specific pandemic-related policies and practices have also targeted refugees who are already fleeing persecution. The Malaysian government “falsely promis[ed] no action on refugees for taking Covid tests, but later ended up arresting and detaining many to be deported.” Journalists attempting to expose conditions for refugees amid the pandemic have been muzzled in several countries.

As international attention remains focused on combatting the coronavirus, governments and other actors have been able to escalate ongoing abuses against vulnerable groups with little scrutiny. In Myanmar, where the International Court of Justice has ordered the government to prevent genocide against the Rohingya and mobile internet access has been largely restricted since June 2019, “The military has intensified attacks in ethnic areas, which can be related to less international scrutiny due to coronavirus. This has caused mass displacement and grave human rights violations, particularly in western Myanmar.” Local civil society groups and other stakeholders similarly have less capacity to hold perpetrators accountable for rights violations not directly linked to the pandemic response.

Despite these grave developments, some bright spots have appeared. The government in Portugal, for instance, granted migrants temporary citizenship rights so they could secure public services. A respondent for Tunisia said that the government and the people “provided aid to all needy minorities and refugees, especially [those] from Syria and Africans.” Sustained, inclusive measures have the potential to pave the way for greater equality after the health crisis has subsided, which in turn can foster better outcomes for future crises.

Authoritarian and democratically elected leaders alike have failed to be candid about the impact of the coronavirus. Among the surveyed experts, 37 percent, representing 65 countries, named government transparency and information about coronavirus as one of the three issues most affected by the response to the pandemic. In fact, shortcomings in transparency and official information ranked highest among the 15 issues suggested to respondents. For experts focused on countries that Freedom in the World classifies as Not Free, the response was even stronger, with 46 percent citing transparency as a chief concern.

Experts from around the world expressed broad skepticism of government information on the coronavirus. A 62 percent majority of survey respondents said they distrust what they are hearing about the pandemic from the national government in their country of focus, and among Not Free countries, 77 percent distrust such information. Respondents expressed slightly more confidence about information from local governments, but a 53 percent majority distrusts these sources as well. About half (52 percent) of respondents, representing 66 countries, said the virus has “led to a proliferation of disinformation coming from the government.” For example, a respondent on Poland saw “politicians making unfounded statements not based on actual data, and when challenged, claiming they have never said such a thing and that their words have been taken out of context.” These attitudes toward government stand in contrast to opinions about the media: a 56 percent majority of respondents have confidence in what the media in their country are reporting about the virus.

In open-ended written responses to the survey, some experts referred to outright government denial of the virus, as in countries including Nicaragua and Turkmenistan, or promotion of unsafe or unproven treatments, in countries such as Brazil and Tanzania. In a chilling response to a question about the most disturbing practice they have seen, one expert said, “Dead bodies buried at night.”

The survey corroborates the idea that corruption thrives when transparency declines; 31 percent of respondents representing 45 countries included “corruption and money in politics” among the top three issues they see as most affected by the pandemic response. Massive government outlays to assist with public health and the economy, often distributed hastily with no meaningful mechanisms in place to monitor the funds, have provided opportunities for corruption. For example, in Mauritania, “the ministers of the ruling party used COVID funds to make donations on behalf of the prime minister.” Other experts shared stories about the disappearance of supplies, or suspicious contracts with uncertified medical providers. In Bosnia and Herzegovina, where a raspberry farm infamously won a state contract to acquire ventilators, “companies not registered for medical services were registered overnight to participate in embezzlement of huge funds for purchase of medical equipment of suspicious origin.”

As the pandemic drags on, public attention will inevitably turn elsewhere, permitting even further abuses to go unchecked. The burden of preventing degraded norms from taking hold will largely fall on democracy advocates and independent journalists, who must continue to place pressure on governments to remain transparent and adhere to the rule of law.

Independent media have often been stifled during the pandemic, making accountability difficult and hampering the dissemination of vital information. Based on Freedom House research, at least 91 of 192 countries (47 percent) experienced restrictions on the news media as part of the response to the coronavirus outbreak. The media in 62 percent of Partly Free countries and 67 percent of Not Free countries under review experienced such constraints.

Journalists covering the crisis have been arrested and targeted with violence, harassment, and intimidation. Governments have exerted control over content, revoked outlets’ registrations, suspended printing of newspapers, denied press credentials, and limited independent questioning at press conferences. New legislation against spreading “fake news” about the virus has been passed, while websites have been blocked and online articles or social media posts removed. The increased public need for impartial information during a pandemic makes such varied methods of suppression particularly egregious.

“I am more cautious in publicly criticising government responses on COVID-19.”

In addition to specific controls on the news media, government restrictions on free speech and criticism of the government have been imposed in at least 72 countries (38 percent); 56 percent of Partly Free and 57 percent of Not Free countries under review saw limits on free expression. As one respondent on Kyrgyzstan said, “Medical workers who openly spoke out about the problems they encountered were forced to apologize and recant their claims on video.” In response to how their work has been affected by the pandemic, a respondent on Bangladesh stated, “I am more cautious in publicly criticising government responses on COVID-19.”

Freedom of expression and belief has precipitously deteriorated during the 14 consecutive years of decline in overall global freedom observed by Freedom in the World. The pandemic has aggravated this negative trajectory, particularly in countries where independent journalism was already under pressure. In Rwanda, where severe legal restrictions are in place and a journalist went missing last year, there has been “a lot of restriction in matters of independent reporting from non-government institutions. Some journalist[s] who were broadcasting via [YouTube] channels were arrested, and others have been reprimanded from covering issues of COVID-19.”

Several countries that experienced a large decline in freedom during 2019[2](https://freedomhouse.org/report/special-report/2020/democracy-under-lockdown#footnote1_2jqfehx) have imposed new or increased restrictions on the media since the outbreak began. One of these countries is Tanzania, where the media has effectively been barred from covering the pandemic. Another is Nigeria, where a respondent wrote that there have been “increased cases of journalists detained for their opinions of government policies,” while the presidency has limited accreditations for press conferences.

These intentional restrictions help enable governments to act with impunity, sometimes with the assistance of a subservient legislature or judiciary. Even when governments seem to be providing accurate information, quarantines and restrictions on travel may hinder the ability of the media to monitor and question them. In the words of a Lebanon respondent, “during lock[down] the government at first did not allow the journalist[s]…to move freely, they had to get special permits.”

Governments and citizens must recognize that press freedoms and freedom of expression are essential tools for exposing misconduct and assessing the effectiveness of the pandemic response. Public health depends on the protection of these core democratic values.

National elections in nine countries, and many more subnational votes, were disrupted in some way between January and August 2020, with frequent accusations that decisions on election administration had been politicized. Given the rapid onset of the pandemic and the acute health risks it posed to voters, postponements were not always unreasonable. Yet such moves frequently failed to meet democratic standards, either because new elections were not scheduled promptly or because officials set new dates without making adequate preparations for safe and secure voting.

Among the 24 countries that had a national election planned during the period under review, 22 nationwide votes took place. Seven countries moved an election date, including three that did not immediately plan for new elections, though they eventually set new dates. COVID-19 provoked changes in election rules in four countries, damaging the credibility of the elections in two cases. There were 13 countries that introduced alternative voting methods that minimized health risks.

In Sri Lanka, President Gotabaya Rajapaksa dissolved the opposition-controlled parliament in March in a bid to hold early parliamentary elections in April. Due to the health crisis, however, the country was unable to conduct the elections within the constitutional timeframe of three months. Five months ultimately passed before the balloting was held in August, during which the president ruled without a legislature. Rajapaksa’s party won the elections in a landslide, adding to fears that he and his brother, former president and current prime minister Mahinda Rajapaksa, would consolidate power and build an authoritarian regime.

Other votes also seemed designed to tighten an authoritarian grip. Burundi’s election went ahead on May 20 with few health precautions for the population, yet foreign observers were required to quarantine; conveniently for the ruling party, none showed up. According to an expert on Belarus, where a fraudulent election has led to ongoing mass protests, “The authorities, having done nothing to stop the spread of the coronavirus, used the epidemic solely to limit the rights of citizens during the election campaign,” including by restricting international and local observers.

Elections were postponed in Ethiopia and Bolivia, dashing hopes that voting would bring clarity to transitional situations. In Ethiopia, reformist prime minister Abiy Ahmed took power in 2018 through an internal party process, and Parliament’s term was set to expire in October 2020. The government decided this spring that the coronavirus necessitated an indefinite electoral delay. This has led to political unrest and fears of a return to authoritarian rule.

In Bolivia, the incumbent government was meant to serve on an interim basis after protests against a seriously flawed vote led former president Evo Morales to flee the country in November 2019. Yet the special election was postponed three times, ostensibly due to the coronavirus. (It was scheduled for October 18 at the time of writing.) Critics of the caretaker president—who is also a presidential candidate—see her handling of the health situation as politically motivated. As one respondent said of Bolivia, “The coronavirus arrived at a moment of democratic fragility, since our country was in the midst of a governmental transition pending new elections…this once again threw the country into a state of social upheaval.”

In Hong Kong, where prodemocracy protests against Beijing’s growing control have persisted for more than a year, legislative elections originally set for September, in which the opposition had hoped to make further gains after major successes in 2019 district council voting, have been postponed by 12 months. Although COVID-19 was the official justification, the relatively low infection and death rates in the territory, the June imposition of a draconian national security law, and the August banning of 12 prodemocracy candidates from running next year are among the many signs that have led experts to accuse the Chinese Communist Party of using the delay to complete its suffocation of Hong Kong’s freedom and autonomy.

Among the countries that held elections, two encouraging cases stand out. South Korean citizens voted for their National Assembly in April with high confidence in their government’s response to the pandemic. Protective measures were implemented at polling places and specific arrangements were made to avoid disenfranchising voters who were sick or quarantined. The ruling party was rewarded with a resounding victory amid the highest turnout in 28 years. In May, New Zealand officials announced a range of measures to help ensure that its September parliamentary elections could go forward, including more early voting, personal protective equipment for polling places, and various forms of remote voting. Although the elections were subsequently pushed to October, the government will remain within its mandate under the plan, and maintains high public trust.

South Korea and New Zealand are both rich, small, established democracies. Nevertheless, they prove that successful elections can go forward during a pandemic with proper planning and resources. COVID-19 cannot be considered a short-term disruption, and democracy cannot be deferred indefinitely. A case to watch is Georgia’s parliamentary elections, set for October, which survey respondents flagged as a possible positive example of international engagement in support of necessary electoral preparations.

COVID-19 has thrived amid the misinformation and scapegoating of democratically elected populists in countries like India and Brazil. It has also deepened the fractures in the democratic institutions of the United States. Not only have US death tolls been among the highest in the world, but the pandemic hit in a crucial election year, and public health has become politicized.

The Trump administration has been sharply criticized for creating a fog of misinformation around the pandemic. In his press conferences and social media posts, the president repeatedly downplayed the severity of the coronavirus, attacked state governors from the opposition Democratic Party for imposing social-distancing measures, promoted unproven treatments and false health statistics, asserted that the pathogen would soon disappear, and pushed for restrictions to be lifted even as the contagion spread, among other harmful statements. The Department of Health and Human Services ordered hospitals to redirect their COVID-19 data from an established reporting system at the Centers for Disease Control and Prevention to a new database controlled by the department, leading to concerns that the information could be manipulated or obfuscated for political reasons. Senior public health professionals who openly contradicted the president’s claims were marginalized, while others struggled to bridge the gap between the science and the administration’s political and economic priorities.

Many of the state-by-state primary elections leading up to the general elections in November were held after the first coronavirus cases were detected in February and March. Attempts to postpone the April voting in Wisconsin led to a mixed series of lower court decisions that culminated in a US Supreme Court ruling the night before election day. In the resulting confusion, thousands of voters who had requested absentee ballots never received them, and wait times for in-person voting reportedly reached up to four hours due to reductions in the number of polling places. Conditions were little better in June, when shortages of poll workers, voting-machine problems, and dysfunction surrounding absentee ballots wreaked havoc in the state of Georgia. Many experts have expressed doubt that local election authorities across the country are prepared for the November elections, citing increased demand for voting by mail, likely staffing shortfalls, and last-minute changes to electoral rules—all related to the pandemic.

In addition to its political reverberations, COVID-19 has underscored the country’s racial inequities, which put Black and Latino populations at a particular disadvantage. Households in these communities are more likely to have members who continued traveling to their workplaces during local lockdown periods because their jobs could not be done remotely, meaning they faced a greater risk of exposure to the virus. Members of these groups were also more likely to have preexisting health conditions—many of which can be linked to systemic bias in housing, health care, employment, and education—that exacerbated the severity of the disease among those who contracted it.

Separately, between March and July, US authorities used an emergency health directive to summarily expel more than 40,000 people who were apprehended for allegedly making unauthorized border crossings, including unaccompanied minors and those who sought to apply for asylum as permitted by US and international law. The policy raised concerns that the Trump administration was exploiting the pandemic as a pretext to set aside due process obligations and intensify its clampdown on asylum seekers and immigration in general.

Individual democracy and human rights activists and journalists, who were already under tremendous pressure from undemocratic governments, have faced severe constraints during the coronavirus outbreak. In survey responses, restrictions on movement in particular were cited for creating obstacles to holding workshops, meeting with sources, providing support to vulnerable populations, and conducting advocacy work. A respondent on Poland explained, “As a journalist, my ability to contact information sources has been limited—most such contacts have to be made electronically…which significantly reduces the confidence of information sources and limits the amount of information I receive.” A respondent on Ghana said, “The quarantine and ban on social gatherings…made it difficult for us to reach the vulnerable during the lockdown, particularly women who suffered from gender-based violence.”

Technological alternatives have been useful for some organizations, for instance by allowing them to engage with more stakeholders, but others lament poor internet connectivity and a diminished ability to accomplish their aims. In Morocco, “project activities linked to human rights [were] either postponed or replaced by online activities which had less impact at the level of interaction and engagement.” In Turkey, an “inability to conduct physical meetings has affected advocacy and outreach work (especially when communities are unable to utilise technology for various reasons).” In contrast, a respondent speaking about activist work in Honduras said that “there is a larger audience that has the time to learn and mobilize as well as show dissent.” Additional work has also arisen as more people need assistance and new government abuses related to the pandemic require monitoring, straining civil society’s capacity.

Funding has become more difficult to obtain, and focus has shifted—among governments, donors, and other stakeholders—from democracy and human rights issues to more basic material needs. As a Philippines respondent said, “The coronavirus outbreak has forced us to adjust our operations,” adding that “the pandemic has also made it more difficult for us to reach the most vulnerable communities due to health and security risks. To adapt, we have mainly moved our legal services online and focused our attention to the urgent needs of Filipinos brought about by the crisis.”

Some experts reported fear of criticizing government policies around the pandemic in part due to crackdowns on the media, activists, and other critics; people were also wary of meeting with these actors. A respondent on Cambodia said, “We are not freely conduct[ing] our project activities…the government just uses [the] coronavirus outbreak as [an] excuse to crack down and criminalize us.”

Attention to urgent public health needs is crucial, but any successes will not be sustainable without support for human rights and strong democratic institutions, including an active and independent civil society.

Activists, journalists, and citizens are working aggressively to overcome the obstacles they face. They are organizing to push back against government abuses in new ways, often utilizing online platforms to engage with expanded audiences and form new partnerships. For example, in Nigeria a respondent reported, “We have adopted the use of social media and USSD codes, which enables the use of simple or non-smart phones to conduct surveys instead of visiting communities to conduct physical surveys.” One organization in the Philippines has developed a “human rights chatbot,” with a respondent explaining that, “our online legal assistance and information campaign has garnered positive feedback from clients.”

Journalism has received a boost in some locations as people seek out information related to the health situation. Many survey respondents described journalists risking their own freedom and safety in order to report on the coronavirus and subsequent government abuses. In the Philippines, where independent media is under assault by the Duterte government, “journalists covering the pandemic are pushing back through their enterprising methods of reporting despite the limitation in movement. They are also more indignant whenever restrictions are applied to the press, such as in the case of [the] ABS-CBN shutdown, wherein hundreds of journalists stood in support of the news network.”

Courts and legislators are also providing checks on excessive power and abuses in certain countries. Brazil’s Supreme Court, for instance, has restrained President Jair Bolsonaro’s antidemocratic tendencies: as Indigenous communities were struck particularly hard by the virus, and Bolsonaro vetoed part of a bill that would have provided them with assistance, the court ruled that the government must enact health measures in response. It also suspended a provisional measure that would have limited freedom of information requests. In Lesotho, a respondent reported, “the judiciary also ruled against the former prime minister’s decision to shut down Parliament using COVID-19 as the reason.” A respondent on Israel reported being inspired by “specific parliament members who stood for themselves against their own political parties.”

Despite quarantines, curfews, and lockdowns, many people are still taking to the streets to challenge their governments, revealing that the global pattern of mass protests that emerged in 2019 has continued. Although 158 countries have had new restrictions placed on protests, Freedom House researchers identified significant protests in at least 90 countries since the outbreak began. These demonstrations were held in 39 percent of Free countries, 60 percent of Partly Free countries, and 43 percent of Not Free countries under review. At least one third of the countries in each region experienced a significant protest, up to two thirds seeing protests in some regions. The sheer number of demonstrations across all types of regimes and in every region of the world demonstrates that even as governments look to take advantage of the crisis to strengthen their own positions, people will continue to challenge them.

Events in Belarus represent a powerful example of pushback in a country where freedom of assembly has long been severely restricted. Unprecedented mass protests against President Alyaksandr Lukashenka, who has led the country since 1994, erupted in August following his claim of victory in a vote marred by repression of opposition figures and allegations of widespread fraud. Resistance against Lukashenka was sparked at least in part by his denial of the pandemic, which contributed to a deadly outbreak of the virus. Thousands of protesters have been detained, and many have been subjected to extensive brutality by security forces, including torture. With Russian president Vladimir Putin threatening to intervene on Lukashenka’s behalf, it is vital that the international community support the protesters’ demands for government accountability and democratic change.

Yet for every noteworthy attempt to hold bad actors accountable and to respect political rights and civil liberties, there are numerous other measures that have chipped away at democratic norms and freedoms. Especially in struggling democracies and amid more recent reformers, freedom is fragile and requires constant cultivation. Proponents of democracy must support one another around the world to ensure that government failures lead to renewed demands for stronger institutions. Otherwise the deadly COVID-19 pandemic will result in lasting damage to global freedom.

#### Majority of the world and many great powers aren’t democracies – the impact should have been triggered – we’ll insert a graph

WPR 22 – World Population Review is an international demographic information website. World Population Review's goal is to make this data more accessible through graphs, charts, analysis, and visualizations. World Population Review is an independent organization without political affiliations. (“Democracy Countries 2022.” World Population Review, 2022, https://worldpopulationreview.com/country-rankings/democracy-countries. )

Graphical user interface, application, map

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**2ac – AT: CCP Collapse !**

**No CCP collapse – resilience, meritocracy, and legitimacy check.**

**Li 13** Eric X. Li is a Henry Crown Fellow at the Aspen Institute. He is also a venture capitalist in Shanghai who serves on the board of directors of China Europe International Business School (CEIBS) and is vice chairman of its publishing arm CEIBS Publishing Group. “The Life of the Party,” Foreign Affairs, Jan/Feb, 92.1, EBSCO

In November 2012, the Chinese Communist Party (CCP) held its 18th National Congress, setting in motion a once-in-a-decade transfer of power to a new generation of leaders. As expected, Xi Jinping took over as general secretary and will become the president of the People's Republic this March. The turnover was a smooth and well-orchestrated demonstration by a confidently rising superpower. That didn't stop international media and even some Chinese intellectuals, however, from portraying it as a moment of crisis. In an issue that was published before the beginning of the congress, for example, The Economist quoted unnamed scholars at a recent conference as saying that China is "unstable at the grass roots, dejected at the middle strata and out of control at the top." To be sure, months before the handover, the scandal surrounding Bo Xilai, the former party boss of the Chongqing municipality, had shattered the CCP'S long-held facade of unity, which had underwritten domestic political stability since the Tiananmen Square upheavals in 1989. To make matters worse, the Chinese economy, which had sustained double-digit GDP growth for two decades, slowed, decelerating for seven straight quarters. China's economic model of rapid industrialization, labor-intensive manufacturing, large-scale government investments in infrastructure, and export growth seemed to have nearly run its course. Some in China and the West have gone so far as to predict the demise of the one-party state, which they allege cannot survive if leading politicians stop delivering economic miracles.¶ Such pessimism, however, is misplaced. There is no doubt that daunting challenges await Xi. But those who suggest that the CCP will not be able to deal with them **fundamentally misread** China's politics and the resilience of its governing institutions. Beijing will be able to meet the country's ills with dynamism and **resilience**, thanks to the **CCP'S adaptability**, system of **meritocracy**, and **legitimacy** with the Chinese people. In the next decade, China will continue to rise, not fade. The country's leaders will consolidate the one-party model and, in the process, challenge the West's conventional wisdom about political development and the inevitable march toward electoral democracy. In the capital of the Middle Kingdom, the world might witness the birth of a post-democratic future.¶ ON-THE-JOB LEARNING¶ The **assertion** that one-party rule is inherently incapable of self-correction does not reflect the **historical record**. During its 63 years in power, the CCP has shown **extraordinary adaptability.** Since its founding in 1949, the People's Republic has pursued a broad range of economic policies. First, the CCP initiated radical land collectivization in the early 1950s. This was followed by the policies of the Great Leap Forward in the late 1950s and the Cultural Revolution in the late 1960s to mid-1970s. After them came the quasi-privatization of farmland in the early 1960s, Deng Xiaoping's market reforms in the late 1970s, and Jiang Zemin's opening up of the CCP'S membership to private businesspeople in the 1990s. The underlying goal has always been economic health, and when a policy did not work -- for example, the disastrous Great Leap Forward and Cultural Revolution -- **China was able to find something that did**: for example, Deng's reforms, which catapulted the Chinese economy into the position of second largest in the world.¶ On the institutional front as well, the CCP has not shied away from reform. One example is the introduction in the 1980s and 1990s of term limits for most political positions (and even of age limits, of 68-70, for the party's most senior leadership). Before this, political leaders had been able to use their positions to accumulate power and perpetuate their rules. Mao Zedong was a case in point. He had ended the civil wars that had plagued China and repelled foreign invasions to become the father of modern China. Yet his prolonged rule led to disastrous mistakes, such as the Cultural Revolution. Now, it is nearly impossible for the few at the top to consolidate long-term power. Upward mobility within the party has also increased.¶ In terms of foreign policy, China has also changed course many times to achieve national greatness. It moved from a close alliance with Moscow in the 1950s to a virtual alliance with the United States in the 1970s and 1980s as it sought to contain the Soviet Union. Today, its pursuit of a more independent foreign policy has once more put it at odds with the United States. But in its ongoing quest for greatness, China is seeking to defy recent historical precedents and rise peacefully, avoiding the militarism that plagued Germany and Japan in the first half of the last century.¶ As China undergoes its ten-year transition, calls at home and abroad for another round of political reform have increased. One radical camp in China and abroad is urging the party to allow multiparty elections or at least accept formal intraparty factions. In this view, only full-scale adversarial politics can ensure that China gets the leadership it needs. However sincere, these demands all miss a basic fact: the CCP has arguably been one of the most self-reforming political organizations in recent world history. There is no doubt that Chinas new leaders face a different world than Hu Jintao did when he took over in 2002, but chances are good that Xi's CCP will be able to adapt to and meet whatever new challenges the rapidly changing domestic and international environments pose. In part, that is because the CCP is heavily meritocratic and promotes those with proven experience and capabilities.

**Collapse is impossible – no credible alternatives.**

**Heath 15**—Senior Defense and International Analyst at the RAND Corporation and Senior China Analyst at USPACOM (2009-2014) [Tim, “No, China’s Not About to Collapse,” 13 Mar, <http://thediplomat.com/2015/03/no-chinas-not-about-to-collapse/>, accessed 9 Nov 2016]

The party’s advantages are less often discussed, but these bear reviewing if one is to evaluate the viability of CCP rule. One of the most overlooked, but important, assets is a **lack of any credible alternative**. The party’s repressive politics prevent the formation of potential candidates, so the alternative to CCP rule for now is anarchy. For a country **still traumatized** by its historic experience with national breakdown, this grants the party **no small advantage**. To truly imperil its authority, the CCP would need to behave in so damaging a manner as to make the **certainty** of political **chaos** and **economic collapse** **preferable** to the continuation of CCP rule. A party that attempted to return to extreme Mao-era policies such as the catastrophic Great Leap Forward could perhaps meet that threshold. But despite the numerous superficial comparisons in Western media, little about the current administration policy agenda resembles classic Maoism.

The second major political advantage lies in improvements to the party’s effectiveness in recent years. In a major paradigm shift, the CCP redefined itself as a “governing party” whose primary responsibility rests in addressing the myriad economic, political, cultural, ecological, and social welfare demands of the people. It has carried out **ideological and political reforms** to improve its competence and effectiveness accordingly. The Xi administration has refined, but upheld, the focus on increasing the nation’s standard of living and realizing national revitalization, objectives embodied in the vision of the “Chinese dream.” Although the party has rightly come in for criticism for moving slowly and inadequately on these issues, the policy agenda nevertheless appears to **resonate** with the majority of Chinese citizens. **Independent polls** **consistently** show that the party has in recent years enjoyed surprisingly **strong** public support.

When weighing the party’s political liabilities against its assets, therefore, the evidence suggests that the CCP faces **little danger** of imminent **collapse**. Improvements to its **cohesion**, **competence**, and **responsiveness**, combined with a policy agenda that resonates with most Chinese and the lack of a compelling alternative **outweigh** the persistent political liabilities. The party’s overall political stability **throughout the 2000s**, **despite massive political unrest** generated by breakneck economic growth, **underscores** this point.

**No lash-out – reform-oriented revolution enables smooth transition that curbs aggression**

**Pei 16** (Minxin Pei is the Tom and Margot Pritzker ’72 Professor of Government at Claremont McKenna College, “Transition in China? More Likely than You Think,” Journal of Democracy, Volume 27, Number 4, October 2016, online)//cmr

“Refolution” is a combination of reform and revolution. Typically, this process starts with limited reform initiated by the old regime, but ends with its involuntary exit from power. This phenomenon was first observed by Alexis de Tocqueville, who famously observed that “the most perilous moment for a bad government is one when it seeks to mend its ways.”22 This Tocquevillean paradox was vividly illustrated when Soviet leader Mikhail Gorbachev’s mid-1980s program of limited political reform, known as perestroika, sparked nationalist independence movements and ultimately a democratic revolution in the Soviet empire. Based on the instances of regime transition since the mid-1970s, “refolution” (or “transplacement,” to use Huntington’s term) can be divided into two categories. The first consists of those transitions that begin with reform and end with the removal of the ruling elites through “founding elections”—peaceful and competitive votes that are negotiated between the old-regime elite and the opposition. The second variant also starts with limited regime-initiated reform, but it ends with the collapse of the old regime rather than its negotiated exit via elections. The final phase of this type of “refolution” resembles a classic revolution, but with one critical difference: The demise of the old regime comes with **relatively little bloodshed**; rather than suffering defeat at the hands of an armed opposition, the regime essentially **disintegrates**—its authority **evaporates**, and its key supporters defect. By Huntington’s count, between 1974 and 1990 eleven transitions qualified as “transplacement.”23 To this list we may now add Burma. Although the country is not yet a full democracy, the democrats are now in charge of the government after the military regime’s humiliating and decisive loss in Burma’s first competitive elections, held in 2015. [End Page 15] The most critical variable in a “refolution” scenario is the shifting balance of power between the old regime and the opposition.24 This insight is crucial when considering the possible transition scenarios in regimes with conditions that are inhospitable to revolution, such as totalitarian or posttotalitarian regimes. For example, mass uprisings have no chance of success in regimes with strong repressive capacity. If, however, a regime becomes significantly weaker during the initial phase of the transition process, there may be some possibility that it could be overthrown at a later stage. The weakening of an old regime typically begins with the decay of its key institutions and the deterioration of its performance. This process can lead to two outcomes: A near-certain outcome is increasing opposition to the old regime and the erosion of its popular support. A less certain outcome is the rise of reformers inside the regime. The deterioration of the old regime could undermine the hard-liners and help reformers to emerge and take control of the top positions. These reformers could then undertake limited changes in the hope of reversing the regime’s deterioration. This would loosen up the old system and create initial opportunities for mass political mobilization. Of course, if the hard-liners manage to hold on to power in spite of the worsening conditions, reform would not occur and decay would continue. If, however, moderate reformers succeed in gaining power and launching limited reforms, three subsequent developments are certain to occur. First, the old regime will **suffer a** further **split** into three groups: moderate reformers in power, hard-liners opposed to even limited changes, and radical reformers demanding fundamental changes. This three-way rift will often produce a **stalemate** that creates highly favorable conditions for the removal of the old regime (primarily because **it paralyzes the old regime’s repressive apparatus**). Second, even in a stalemated reform process societal forces will gain unprecedented freedom and lose their fear of repression. This window of opportunity allows them to mobilize and acquire new capacities, thus **shifting the balance of power in their favor**. Third, the erosion of the old regime’s legitimacy will continue at an accelerating pace. Posttotalitarian regimes that attempt to reform must bear the heavy burden of history—specifically, the responsibility for crimes committed by their totalitarian predecessors against their own people. Limited [End Page 16] reform invariably brings greater press freedom, which in turn exposes the old regime’s crimes, laying bear the “Big Lie” that had shored up the regime’s legitimacy. A thoroughly delegitimized old regime is highly vulnerable to revolutionary overthrow. In essence, this describes the “refolution” dynamics that led to the collapse of the USSR. In the Chinese case, the likelihood of “refolution” will increase in the next ten years. By then, China will have experienced roughly an additional decade of regime decay. The effects of long-term economic stagnation, social frustrations, and deteriorating performance will have become plainly visible. If Xi steps down at the end of his second term, his successor will be under immense pressure to reverse the CCP’s declining fortunes. Such speculation, of course, assumes the likely failure of Xi’s efforts to revive the CCP through a mix of internal discipline, heightened repression, appeals to nationalism, and partial economic reforms. Moreover, by the dawn of the next decade, the CCP’s two post–Mao-era survival strategies—neoauthoritarian crony capitalism and strongman rule—will have proved to be unviable. Xi’s successor will therefore have to find another way to regain legitimacy. It will be a supreme irony of history if the CCP is ultimately brought down by refolution. Since Tiananmen, no nightmare has obsessed the CCP leadership more than the collapse of the Soviet Union, and no political leader has been more reviled by the party than Gorbachev. It is possible that the CCP’s determination not to succumb to the same fate as the Soviet Union will prevent the emergence of a Gorbachev-like figure, however dire the circumstances. But again, **authoritarian regimes adopt reform** mostly **out of despair**. Truly **desperate dictatorships** may **have few other options**. This dynamic compelled Mao’s immediate successors to embrace capitalism in the late 1970s, and we should not rule out the possibility that the same logic will force future Chinese leaders to take another historic gamble.

**2ac – AT: Food Security !**

**China won’t invade Taiwan---it’s militarily impossible**

Patrick Porter 18. Professor of strategic studies at the University of Exeter. “The tyrannies of distance” in A. T. Thrall and B. H. Friedman eds. US Grand Strategy in the 21st Century. Routledge. 114-127.

But even if Taiwan was forcibly stripped of its surface-to-air missiles (SAMs) , and China could command the skies at low cost, in a wider context China faces a dilemma, a tradeoff between surprise and preparation. Whether it struck in 2009 14 or 2019, surprise and deception would come at the expense of preparedness and speed of engagement with large-scale forces, and vice versa. To inflict a surprise first strike that successfully suppressed Taiwan's air defences to the extent that it achieved air dominance, China would need to do so from a standing start, and to avoid giving the game away would have to forgo the prior preparation of a large-scale invasion force into a cross-strait armada, to cross the 100 nautical miles (run) from its bases closest to the most plausible point of assault, the small number of locations on the north-west beaches of Taiwan. It could hardly amass this force invisibly if a watchful Taiwan was **minimally alert** and used its surveillance technology efficiently. The interval between the first strike and then preparation for the attempted invasion would afford a vital window of time for Taiwan to **recover** and **prepare** for the next phase, including the roughly seven hours it would take for a fleet travelling at 15 knots to make the one-way crossing. Conversely, to prepare adequately with a buildup of force would sacrifice surprise, giving Taiwan **days** at least to **disperse** its forces, **ensure the survival** of large parts of its air force and get its planes off the airfields. Taiwan's **topography** is such that there are only a few landing-friendly points along its 500-mile coastline where a massed invasion could take place and where the defender could concentrate its forces. Consider the contrast with the Allied invasion of Normandy, where an amphibious assault could have taken place along a coastline 1,200 miles long and without the surveillance assets of today. Since the invasion fleet would have to be a sizable one of 100 assault ships loading vehicles, troops and supplies, and since a fully loaded invasion fleet would take about seven hours going at 15 knots in a one-way crossing of 100 nautical miles at the closest point, it is **inconceivable** that Taiwan would not see the buildup or see them coming.

Given China's greater strength of numbers and firepower and the problem that Taiwan would simply be unable to out-match it in crude material terms, a vital part of Taiwan's defence is the degree to which it has chosen prudent 'doctrine', and how realistically it defines victory. Doctrine simply means ideas of force employment. It scarcely determines outcomes, and relies on execution, but is needed to link technological means with strategic ends. Taiwan may not be able to out-gun China materially, but as **history** suggests, well-prepared weaker defending sides can return fire by **optimising** what they have to create an **imposing defensive system**. Taiwanese and international observers have intensively debated what it should do with its lesser resources in the face of an adversary whose relative material strength is growing alarmingly. Several competing doctrinal options have been on the table. None of these are mutually exclusive but there are tradeoffs involved, as each would draw resources from the others. They can be organised around two ideal-typical 'poles', 'classical defence' and 'porcupine defence'.

The 'classical defence' grows out of Taiwan's traditional doctrine of defence against an invader. When it had the greater qualitative military edge, Taiwan defined victory in offensive terms, to win in a direct clash for control of the seas and skies, overpowering China's larger but less advanced forces. It also planned on interdicting China's approaching forces far from Taiwan's coast. Designed for a symmetrical, toeto-toe clash, this approach was capital-intense and involved hi-tech conventional forces at the cutting edge. It sought to thwart Chinese invading forces out at sea and in air space well beyond its islands, which would also be defended by a mass citizen army. Budgetary constraints, China's military modernisation fuelled by economic growth, disenchantment with conscription and a shift to an all-volunteer army have made this approach problematic. Today the model is reinventeq in the argument that Taiwan should compete with China's modernisation programme with its own, lobbying hard for state-of-the-art aircraft such as the F 16 CID or the Joint Strike Fighter, as well as developing the ability to engage in a conflict via bombing the Chinese mainland with surface-to-surface missiles with extended range, which would also form a pre-emptive strike capability. In a struggle that would entail a clash of advanced machines, Taiwan would not give up its effort to compete in the same technological contest and match its quality with China's.

By contrast, the **'porcupine defence'** is more deliberately **asymmetrical** in the sense that it seeks to exploit the differences between invader and defender - differences of strategic objective as well as differences in the type of forces being used (Murray 2008). Instead of an expensive modernisation programme that attempts to match the quality if not the quantity of China's forces, it looks more to a 'passive defence' that would ensure that enough of Taiwan's forces could survive the initial onslaught. The porcupine approach invests more in the survivability of forces, their dispersal and concealment, the hardening of **c**ommand and **c**ontrol systems, the repair of damaged assets such as runways, and resilience against electromagnetic and cyber attacks. It is a more army-centric doctrine that places more investment in fortifying ground-based infrastructure and training personnel for a land war. It emphasises the exploitation of terrain. It is **less reliant on American largesse** and technology transfer. In an alternative version, a low-tech porcupine strategy could also extend out to sea, with guerrilla warfare in nearby waters waged by 'swarms of light combatants' (Holmes 2013a).

What we know of Taiwan's actual strategy mixes features from both models. The evidence that we have suggests that Taiwan is making **prudent choices** about how it allocates its resources and is redefining its objectives realistically. It draws from the porcupine logic the shift from ambitious to achievable strategic goals. Rather than seeking to defeat Chinese forces outright in a decisive Mahanian naval clash, its objective is to **deny China** an affordable conquest by **raising costs** on invader to defend defacto independence. When it had the greater qualitative military edge, Taiwan defined victory in offensive terms - to win in a direct clash for control of seas and skies, overpowering and destroying China's larger but less advanced forces. It designed its defences accordingly, around capital ships and advanced planes and matching its adversaries' investments. Judging by its own published doctrine, the National Defense Report of 2011, Taiwan recognises that victory in these terms is no longer realistic and it is switching accordingly (Cole 2013a). Taiwan now defines victory as ensuring the survival of enough forces and preventing land forces establishing a foothold on Taiwan (Republic of China 2011: 131-132).4 Its Quadrennial Defense Review of 2013 also suggests a doctrinal shift, emphasising the preservation of critical infrastructure to prevent being paralysed by 'sudden and high-intensity assaults' and the exploitation of Taiwan's advantages in space and time (Republic of China 2013: 38-40, 41). The same logic that enables China with today's tools to raise the costs of US intervention into its maritime space to unpalatable levels enables Taiwan to do the same at a price more suited to its limited GDP expenditure on defence (Blumenthal 2011; Holmes 2013b). To turn the nautical approaches to the island into contested zones, it exploits **'swarming' methods** by preparing small-attack craft armed with anti-ship cruise missiles as **light guerrillas at sea**.

There is evidence that Taiwan is putting these doctrinal decisions into practice (Minnick 2010; Cole 2012a; Cole 2013b; Cole 2013c; United States-Taiwan Business Council 2010). Taiwan has built a **hidden underground sanctuary** inside a mountain near its Hualien air base on its east coast, a bomb shelter large enough to shelter 200 fighters linked to the above-ground base by a 7,500 foot taxiway. At least since 2010, it has been **hardening** airfield facilities, has introduced a major hardened aircraft storage facility at Taitung in south-eastern Taiwan, and is now addressing one of the weaknesses identified by RAND in 2009 by strengthening its Rapid Runway Repair crews to improve the survivability of runways at several air bases. It invests in **mobile** launchers for missiles and has acquired and now fields roadmobile missile launchers that can be **dispersed** and **camouflaged**, armed with rockets capable of firing at ships (such as the HF-3 supersonic anti-ship cruise missile) and Ray Ting 2000s with an artillery range of up to 45 km into China's mainland. To turn the point of amphibious landing into a shooting gallery, it is digging in with entrenched anti-ship and anti-air missile sites. To make both the sea approach and the beachhead more perilous, it prepares **sea and land mines**, the former of which could be scattered by artillery tubes. And it prepares to wage a 'war of the flea' out at sea with small, fast and low-signature missile-armed ships (31 Kuang Hua VI class boats) that are harder to locate and sink than heavier frigates and destroyers. They would be assisted by 12 maritime patrol aircraft. These lighter ships are armed with cruise and surface-to-surface missiles, thereby mixing the asymmetric logic of the porcupine strategy with the active extended defence desired by the classical approach. There is some uncertainty about how effectively these could operate in a full-scale war scenario, given their reliance on off-board radar and datalinks for targeting, which are located on vulnerable radar sites within range of China's missiles. Regardless, Taiwan has also diversified and expanded its number of smaller ships, increasing the number of its coastal patrol craft from 51 to 61 - a 20% increase as of 2012 (Cordesman, Hess, and Yarosh 2012: 198) - and armed seven patrol boats and . a radar-evasive fast attack corvette with Hsiung Feng III (HF-3) ramjet-powered supersonic anti-ship missiles to increase the probability of having a surviving naval defence off its coastline. This prudently trades off Taiwan's ability to fight a high-seas naval battle for the ability to mount a defence closer to its littoral. Taipei has also developed the ability to push the defence line further out from its coast through the alternative means of long-range missiles that enable the interdiction of enemy forces out at sea. If the 'swarming' orchestration of smaller assets against larger forces is potentially a potent way for weaker states like Taiwan to threaten surface fleets with their large, expensively acquired capital ships, on the evidence we have, a prima facie overview suggests that Taiwan has developed both the doctrine and the tools to carry it off (Holmes and Yoshihara 2012). Since RAND produced its estimate in 2009, Taiwan's increasing investment in and attention to building a passive defence by increasing the probability that its capabilities will be **dispersed**, **concealed** and **survivable** is possibly the most significant development in Taiwan's preparation to counter the growing 'missile' imbalance across the straits.

Even though there remains uncertainty about the success of any of these measures in a conflict, each of them adds a **'layer' of defence** that increases the probability that China will not be able to clear the seas and skies sufficiently to create a safe corridor for its invading forces to approach, and that Taiwan can punch back and inflict significant damage after the first barrage. Just as importantly, each extra layer of potential surviving defence **adds uncertainty** to **China's calculations** about the **costs of invasion**. 5 Through passive defensive measures, Taiwan would aim to keep its forces survivable: through mobility, redundancy, and the hardening and camouflage of its assets, as well as the stockpiling of food and fuel. These would not prevent large-scale damage to Taiwan's military and civilian property but could preserve enough combat power to keep material costs on following-on invading force high. This doctrine, properly applied, would help it raise costs on amphibious force as it approached and as it reached the shore in the following phases.

The 'bottom line' in an amphibious campaign is the ability to transport enough troops to the point of invasion, and securely enough to land and supply them. Let us assume that China now possesses the 100 transport ships it aims to acquire. Going on a rough 1: 1 personnel ratio, RAND estimated in 2009 that China would need to get at least two group armies, or roughly 60,000 troops, ashore, and that this would require 194 successful naval trips or sorties.6 The difficulty for China is that unless its initial effort to suppress Taiwan's defences and deflect its air and naval attacks succeeds almost perfectly, its ability to get enough ships across safely will be in **jeopardy**. Unless China could successfully neutralise Taiwan's ability to 'thin the herd' by taking out its air bases, its fixed and mobile land-based missile launchers (such as RBS-17 coastal-defence missiles mounted on trucks), its missile-armed Apache helicopters and its swarming fast-attack ships, **its invasion will be in trouble**.

To take one layer of defence alone: RAND estimates that ifTaiwan's 31 Kuang Hua VI class fast missile boats, armed with four Hsiung Feng II ASCMs each, launch half of their payload, that would put 60 in the air, enough to inflict a disabling 'mission kill' on perhaps 12 Chinese transport ships. Going on RAND's estimate that, distributed evenly, each ship represents 310 troops and six vehicles, 12 ships sunk or turned back would see off 3,700 troops and 72 vehicles, and prevent those ships from participating in the three extra sorties needed for the entire transport fleet to get 60,000 troops and their equipment across within a reasonable span of five days. If China would want each ship to attempt four sorties, 12 ships taken out of action before completing their first sortie would mean a total of 48 sorties denied of the 194 out of 400 needed to succeed.

In this first phase, the weight of forces would favour China, but the conditions of space and time would **favour Taiwan**. On the more optimistic end of the spectrum, Taiwan's early-warning system would succeed, giving it vital minutes to protect its forces from incoming strikes and preserving enough planes to contest the skies. But taking a worse-case scenario would also leave it with warning of another kind. The Chinese air force, with saturation missile attacks and then fixed-wing attacks, lands a knockout punch against Taiwan's air bases, following the failure of its earlywarning system, Taiwan would be forced to use degraded air bases with a degraded capacity to generate air sorties. But, to ensure deception and surprise, China would have to refrain from large-scale preparatory buildup of amphibious forces. The air attack plus the time it would take to build up invasion forces would place Taiwan on notice to mobilise forces for defending ground. If Taiwan had time and depending on levels of preparation, it could adopt a 'layered' forward defence, looking to 'thin the herd' of China's amphibious forces at sea before defending at the water's edge. It would take aim primarily at its transport ships.

Let us suppose that despite the many problems the task would entail, China has seized the ability to cross the distance of 100 nautical miles from the bases closest to north-west Taiwan, neutralised Taiwan's sea and air defences, and reached the coast bearing platforms to operate from, such as several Type 071 Landing Platform Dock ships with hangers and landing and vehicle decks, loaded with marines, vehicles and helicopters, and over a dozen landing ships. The next task would be to forcibly enter terrain in the face of reinforced defences while vulnerable, establish a beachhead, and continuously supply a very large military force across the ocean despite adversary actions.

In a **worst-case scenario** for Taiwan, where China successfully destroyed its air bases and runways, the defender would probably still be able to **mount a robust defence** that inflicted **serious costs** by creating a **lethal zone** at the point of 'run-in' where the approaching forces must operate in plain sight, unmasked by electronic sensors (see Shlapak et al. 2009: 114-115). Taiwan's coastline means that it could anticipate the approximate point of invasion. China's transport ships would enter a **kill zone** in which Taiwan would have roughly a 20-minute window to fire Hellfire missiles at transports, or five minutes to fire at faster air-cushion landing craft. Then with a minimal surviving blend of Apache helicopters, dug-in and mobile artillery, and missile forces and mines, Taiwan could be expected to turn the point of disembarkation **into a shooting gallery** and a **chaotic traffic jam**, even if it lacked control of the skies over the beach and even if its aircraft were pinned in shelters or immobilised by destroyed runways. If it would take two 1,000 lb bombs, such as Joint Direct Attack Munitions, to destroy a warship, 100 fired by a B-1B plane could disable 50 ships, or failing that, helicopters, ground launchers, infantry and tanks could deliver Hellfire missiles over a short range of five miles. In this respect, RAND's estimate of 2009 still holds, only Taiwan has taken greater steps to ensure that its arsenal would survive the preliminary bombardment.

This is not the place for a precise forecast that ignores the play of chance and the effect of 'unknowns', not least China's relative ability to mount cyber attacks against Taiwan's increasing preparations of cyber defence, an aspect of the conflict too secretive and untraceable to measure precisely in advance. But on this analysis, the scenario is more difficult for the invader than the attacker, to the extent that the stars must align more or less perfectly for the attacker. The defender, Taiwan, would merely have to ride out the first bombardment well enough to be able to make an attempted invasion expensive. As I argue, a Chinese invasion would be **costly**, **protracted** and **geopolitically dangerous**. There is no certain way to measure the political will of either side in a neat cost-benefit calculs. Taiwan represents something bigger politically than just an island with resources, to both its inhabitants and the larger state that covets it, and the history of the issue is drenched with emotion. We can estimate, however, what an attempted conquest would entail and the kinds of costs and risks that the invader would be wise to consider. The longer the struggle continued, the greater would be the fear of it escalating and drawing in other powers. Taiwan's objective would be to pose the question to China of just how large a sacrifice it was prepared to make to achieve its objectives. Despite the eroding defence advantages and closing gap between China and Taiwan's forces, Taiwan could still inflict **grave**, possibly **prohibitive costs** on the invader. China's increasing airpower 'edge' and strengthening cross-strait strike and invasion capabilities would **not be enough** to negate the possibility of exploiting geography to the **defender's decisive advantage**. Taiwan's objective, within reach of its capabilities, would not be to sink/destroy China's navy and air force, but to make adventurism very expensive, to the point where successful conquest would set China's military back years if not **decades**. This confirms the recent warning of RAND that 'forced entry' via large-scale, over-the-shore amphibious assault against resistance is obsolete for many environments (Davis and Wilson 2011: 13-14). The same logic that enables China with today's tools to raise the costs of US intervention into its maritime space to unpalatable levels enables Taiwan to do the same at a price more suited to its limited GDP expenditure on defence. For America, these developments both **generate security** and constrain its power at the same time. As Christopher Layne argues, 'Far from shrinking the world grand strategically, for the United States, modern weaponry - naval and strategic airpower, intercontinental delivery systems, and nuclear weapons - has widened it' (Layne 2006: 278).

3 No-one's world: negotiating power in an unconquerable Asia

If we really do inhabit a globalising world where distance loses its force, that process should make conquest easier. This should be so to the extent that the outcomes of conflicts are generated by the balance of material forces, mediated far less by the effects of exploiting terrain than they would have been historically. But as this chapter argues, our era is different. Across bodies of water, it is one of fire without conquest. New weapons with their range and lethality have the capacity to increase distance and erect new barriers to interlopers. Space, therefore, is better conceived as an interplay of political will, capabilities and geography. As I have demonstrated here, the history of the continual shifting balance between sword and shield, and the tendency of states to measure the stakes involved according to the 'nearness' or 'farness' of the war, casts doubt on strategic visions where technology erases the dilemmas of distance or creates unambiguous 'offence dominance'. We are seeing the emergence of a period of access denial. These issues are pressing in maritime East Asia, where the strategic implications of new weapons shape the rivalries and mutual fears of rising powers. An illustrative case where offensive technology would meet the exploitation of time, space and terrain for defensive purposes is the crossstrait military balance and the prospects for a Chinese invasion of Taiwan.

The estimate here suggests that amphibious assaults, projecting ground forces from sea to land, against a determined adversary making prudent doctrinal and technological choices, remain complex and demanding. There is little doubt that in a war that the US stayed out of, China would probably eventually prevail at least as far as neutralising Taiwan's air force and navy, if not simply sending repeated waves of ground troops if it could keep enough sea and airlift capability. But it would be **costly**, **protracted** and **geopolitically dangerous**. This problem is reflected also in the projections of future campaigns by the US Marine Corps, the world's premier amphibious force. Its 'Expeditionary Force 21' concept predicts that ever longer range capabilities, such as precision guided missiles, along with widely available and cheap sensors like nautical radar, 'will force the fleet to stay at least 65 nautical miles offshore, a dozen times the distance that existing Marine amphibious vehicles are designed to swim' (Freedberg 2014)

Of course, this is about more than capabilities. There is no certain way to measure the political will of either side in a neat cost-benefit calculus. To itself and its hostile larger neighbour, Taiwan represents something bigger politically than just an island with resources, and the history of the issue is drenched with emotion. We can estimate, however, what an attempted conquest would entail and the kinds of costs and risks that the invader would be wise to consider. The longer the struggle continued, the greater fear of it escalating and drawing in other powers. Taiwan's objective would be to pose the question to China of just how large a sacrifice it was prepared to make to achieve its objectives. Despite the eroding defence advantages and closing gap between China and Taiwan's forces, Taiwan could still inflict **grave**, possibly **prohibitive costs** on the invader. China's increasing airpower 'edge' and strengthening cross-strait strike and invasion capabilities **would not be enough** to negate the possibility of exploiting geography to the defender's decisive advantage. Taiwan's objective, within reach of its capabilities, would not be to sink/ destroy China's navy and air force, but to make adventurism very expensive, to the point where successful conquest would set its military back years if not decades. This confirms the recent warning of RAND that 'forced entry' via large-scale, overthe-shore amphibious assault against resistance, is **obsolete** for many environments (Davis and Wilson 2011: 13-14).

What does all this mean in the bigger picture? It should both caution and **reassure** US policymakers. Taiwan can present an ominous defence against an invader **without America** going to the trouble of ramping up its security assistance and arms trade with Taiwan, and the deterioration of relations with China that this may create. Taiwan's vulnerability is **easily exaggerated**. In terms of its ability to conquer, a rising China is **not** as strategically threatening as sometimes assumed. This is also important for the wider security environment. Contrary to the views of some observers, it is **not** clear that Beijing has an appetite for limitless expansion, or that China's strategy of'peaceful rise' is comparable to that of the Third Reich. But **even if** China does increase its appetite and make a bid for region-wide supremacy, now or in the future, conditions are **not promising** for a would-be conqueror. East Asia is **not** a power vacuum open to the predations of a single aggressor like Nazi Germany or Imperial Japan, but a region crowded with states developing their own formidable defensive maritime-air capabilities to deter and respond to one power's adventurism.

The other side of that coin is that American military power is more greatly constrained than before. If it is true that the home defender enjoys advantage against the cross-sea invader, so too does China's geographic and strategic position make life increasingly difficult for America as an Asia-Pacific power. China's greater proximity to Taiwan in West Pacific or East Asian waters combined with its growing capacity for access and area denial threatens America's ability to intervene at acceptable cost, and more broadly therefore to maintain its credibility as a security guarantor. It is harder for America to function as the guardian of the Pacific region if its ability to operate there is strained and it can no longer act as though the sea lanes were its uncontested lake. This poses difficulties to America's 'air-sea battle' concept. Washington's 'pivot' towards Asia is 'a foreign-policy enterprise by which US joint forces concentrate for action in remote theaters. The military must mass strategically significant quantities of soldiers and armaments in a contested theatre like the Far East, surmounting both transoceanic distances and regional antagonists' attempts to veto intervention' (Holmes 2013a). The increasing range and lethality of weapons systems coupled with the determination of states to defend themselves means that, paradoxically, the growing capacity of states to strike over range has also empowered defenders to an unusual degree.

We are left with a paradox. On the one hand, today's war-making tools with their reach seem to have collapsed distance in a physical sense. On the other hand, as this chapter demonstrates, it seems prima facie that the conquest of territory against defenders with a minimal level of will and capability mostly no longer pays. The greater reach and lethality of weapons today empowers defenders as well as attackers, and, at least in the case of attempted territorial expansion across bodies of water, there remains an **overall imbalance that favours defenders** if they are willing and competent enough to resist. The likely costs of conquest most of the time make it **prohibitively difficult**. Measured in these terms, for would-be conquerors and for those who would ride to the rescue of the conquered, the world has never been so large.

**2ac – AI Hurts Food Security**

**Turn---Using AI in agriculture wrecks food security.**

Inga de **Jong 22**, Inga is a senior journalist at CNS Media Group BV. She has a bachelors in technology., 2-25-2022, “AI poses a real threat to food security, Cambridge University researchers warn,” <https://www.foodingredientsfirst.com/news/ai-poses-a-real-threat-to-food-security-cambridge-university-researchers-warn.html>, oj

25 Feb 2022 ---The use of artificial intelligence (AI) in agriculture poses **substantial risks** to **food security**, warns a risk analysis from the University of Cambridge’s Centre for the Study of Existential Risk (CSER). “The idea of intelligent machines running farms is not science fiction. Large companies are already pioneering the next generation of autonomous ag-bots and decision support systems that will replace humans in the field,” says Dr. Asaf Tzachor, University of Cambridge, CSER. “But so far, no-one seems to have asked the question ‘Are there any risks associated with a rapid deployment of agricultural AI?’” he adds. The researchers warn that the risks of AI to farming and food security are “poorly understood and under-appreciated” and raise the alarm about **cyber attackers** potentially disrupting farms by poisoning datasets, shutting down sprayers, autonomous drones and robotic harvesters. Capacity to destabilize cities Despite the considerable promise of AI for improving crop management and agricultural productivity, potential risks must be addressed responsibly, the Cambridge researchers urge. New technologies need to be tested adequately in experimental settings to ensure **safe and secure** against **accidental failures**, **unintended consequences**, **and cyber-attacks**. Crops that feed millions can be rendered **useless** by a single hacking incident. “AI is being hailed as the way to revolutionize agriculture. As we deploy this technology on a large scale, we should closely consider potential risks and aim to mitigate those early on in the technology design,” says Dr. Seán Ó héigeartaigh, executive director of CSER. The researchers sketch a hypothetical scenario in which hackers access the AI system that controls drip-irrigation, tractors, combine harvesters and weather responsive tech on an acres-long field of wheat intended to supply bread to cities. A staple crop **feeding** **millions** of people is rendered useless in one fell swoop. The analysis “Responsible artificial intelligence in agriculture requires systemic understanding of risks and externalities” has been published in Nature Machine Intelligence. The authors provide a catalog of risks to be considered in the responsible development of AI for agriculture and ways to address them. To guard against hacking, the authors suggest that ‘white hat hackers’ help companies uncover any security failings during the development phase so that systems are safeguarded against real hackers. Mitigating accidental AI failure In a scenario associated with accidental failure, the authors suggest that an AI system programmed to deliver the best crop yield in the short term might ignore the **environmental consequences** of achieving this, leading to overuse of fertilizers and soil erosion for a long time. Over-application of pesticides in pursuit of high yields could **poison ecosystems**; over-application of nitrogen fertilizer would **pollute** the **soil and** surrounding **waterways**. The authors suggest involving applied ecologists in the technology design process to avoid these scenarios. Autonomous machines could improve the working conditions of farmers, relieving them of manual labor. However, without inclusive technology design, socioeconomic inequalities currently entrenched in global agriculture – including gender, class, and ethnic discrimination – will remain. “Expert AI farming systems that don’t consider the complexities of labor inputs will ignore, and potentially sustain, the exploitation of disadvantaged communities,” warns Tzachor. Many farmers are already dependent on artificial intelligence for monitoring and harvesting crops. Dangers of targeting drones Ag-bots, drones and sensors are already used to gather information on crops and support farmers’ decision-making. This includes detecting diseases or insufficient irrigation. Self-driving combine harvesters can bring in a crop without the need for a human operator. While these automated systems aim to make farming more efficient, save labor costs, optimize for production and minimize waste, it also relies on AI. It leads to increased revenues for farmers as a result. Another blind spot in the use of AI is that small-scale growers, who cultivate most farms worldwide, are likely to be excluded from AI-related benefits. Poor internet penetration rates might prevent smallholders from using advanced technologies, widening the gaps between commercial and subsistence farmers. Wageningen University and Research (WUR) researchers are also investigating the impact of AI on the agri-food space, following US$2.5 million in funding from the Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO).

**2ac – Disease !**

#### Absolutely no chance of extinction from disease

Adalja 16 [Amesh Adalja, infectious disease physician at the University of Pittsburgh] “Why Hasn't Disease Wiped out the Human Race?” June 17, 2016 (http://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/) - MZhu

But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained. I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience. For most of mankind’s history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived. Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like. So what would it take for a disease to wipe out humanity now? In Michael Crichton’s The Andromeda Strain, the canonical book in the disease-outbreak genre, an alien microbe threatens the human race with extinction, and humanity’s best minds are marshaled to combat the enemy organism. Fortunately, outside of fiction, there’s no reason to expect alien pathogens to wage war on the human race any time soon, and my analysis suggests that any real-life domestic microbe reaching an extinction level of threat probably is just as unlikely. Any apocalyptic pathogen would need to possess a very special combination of two attributes. First, it would have to be so unfamiliar that no existing therapy or vaccine could be applied to it. Second, it would need to have a high and surreptitious transmissibility before symptoms occur. The first is essential because any microbe from a known class of pathogens would, by definition, have family members that could serve as models for containment and countermeasures. The second would allow the hypothetical disease to spread without being detected by even the most astute clinicians. The three infectious diseases most likely to be considered extinction-level threats in the world today—influenza, HIV, and Ebola—don’t meet these two requirements. Influenza, for instance, despite its well-established ability to kill on a large scale, its contagiousness, and its unrivaled ability to shift and drift away from our vaccines, is still what I would call a “known unknown.” While there are many mysteries about how new flu strains emerge, from at least the time of Hippocrates, humans have been attuned to its risk. And in the modern era, a full-fledged industry of influenza preparedness exists, with effective vaccine strategies and antiviral therapies. HIV, which has killed 39 million people over several decades, is similarly limited due to several factors. Most importantly, HIV’s dependency on blood and body fluid for transmission (similar to Ebola) requires intimate human-to-human contact, which limits contagion. Highly potent antiviral therapy allows most people to live normally with the disease, and a substantial group of the population has genetic mutations that render them impervious to infection in the first place. Lastly, simple prevention strategies such as needle exchange for injection drug users and barrier contraceptives—when available—can curtail transmission risk. Ebola, for many of the same reasons as HIV as well as several others, also falls short of the mark. This is especially due to the fact that it spreads almost exclusively through people with easily recognizable symptoms, plus the taming of its once unfathomable 90 percent mortality rate by simple supportive care. Beyond those three, every other known disease falls short of what seems required to wipe out humans—which is, of course, why we’re still here. And it’s not that diseases are ineffective. On the contrary, diseases’ failure to knock us out is a testament to just how resilient humans are. Part of our evolutionary heritage is our immune system, one of the most complex on the planet, even without the benefit of vaccines or the helping hand of antimicrobial drugs. This system, when viewed at a species level, can adapt to almost any enemy imaginable. Coupled to genetic variations amongst humans—which open up the possibility for a range of advantages, from imperviousness to infection to a tendency for mild symptoms—this adaptability ensures that almost any infectious disease onslaught will leave a large proportion of the population alive to rebuild, in contrast to the fictional Hollywood versions. While the immune system’s role can never be understated, an even more powerful protector is the faculty of consciousness. Humans are not the most prolific, quickly evolving, or strongest organisms on the planet, but as Aristotle identified, humans are the rational animals—and it is this fundamental distinguishing characteristic that allows humans to form abstractions, think in principles, and plan long-range. These capacities, in turn, allow humans to modify, alter, and improve themselves and their environments. Consciousness equips us, at an individual and a species level, to make nature safe for the species through such technological marvels as antibiotics, antivirals, vaccines, and sanitation. When humans began to focus their minds on the problems posed by infectious disease, human life ceased being nasty, brutish, and short. In many ways, human consciousness became infectious diseases’ worthiest adversary.

**2ac – China AI decks heg and alliances**

**China will use lethal AI to act against the US and its allies**

Alex **Stephenson** and Ryan **Fedasiuk 22**, Alex Stephenson is a China military technology research assistant at Georgetown University’s Center for Security and Emerging Technology and former surface warfare officer in the U.S. Navy. Ryan Fedasiuk is a research analyst at Georgetown University’s Center for Security and Emerging Technology and an adjunct fellow at the Center for a New American Security.5-3-2022, “How AI Would — and Wouldn’t — Factor Into a U.S.-Chinese War,” <https://warontherocks.com/2022/05/how-ai-would-and-wouldnt-factor-into-a-u-s-chinese-war/>, oj

How AI Could Enhance Chinese Capability The most likely sources of a potential **U.S.-Chinese conflic**t, such as a **Chinese invasion of Taiwan** or a contest over some **South China Sea feature**, would likely feature the full spectrum of **civil and military information operations** aimed at deterring **U.S. intervention** and degrading U.S. allies’ will to fight. AI could play a dominant role in each of these missions. The **Network Systems Department of the People’s Liberation Army**, for example, may try using generative language models to synthesize and amplify content on Facebook and Instagram, as it has done using **botnets** and other non-AI tools around **Taiwanese elections**. The Chinese military is also likely to wage a similar campaign to discredit U.S. **military activities** or **sow division** with partners, including Australia and Japan. Soon after the start of a conflict, the People’s Liberation Army would likely attack U.S. **sensor and communication networks**, and several different kinds of machine-learning applications could aid this task. A cadre of scientists at the People’s Liberation Army National University of Defense Technology, for example, specializes in **“fuzzing,”** using machine learning to identify vulnerabilities in an adversary’s **computer networks**. Experts also point to AI’s role in attacking or defending **critical infrastructure** in Taiwan, Japan, Australia, or the United States. Chinese planners also aim to use AI for **electronic countermeasures** and operations across the **electromagnetic spectrum**. For example, analysts from anquan neican (a Chinese journal for cybersecurity research) are optimistic about cognitive **electronic warfare** — using AI to analyze incoming **radar signals**, and then automatically adapting one’s own output to optimize **jamming.** But several other applications of AI also play a role in electronic spectrum operations. In 2020, for example, the **People’s Liberation Arm**y awarded equipment contracts for **swarms of drones** equipped with modular **radar-jamming systems**, which could be flown near **U.S. carrier strike groups**, military installations in Japan and South Korea, or shared facilities in the Philippines. Many systems under development by Chinese universities and military research institutions are explicitly designed to counter **U.S. drone systems** and swarm concepts. Chinese companies have already exported drones to Nigeria, the United Arab Emirates, and Egypt, among others. However, while some People’s Liberation Army experts contend that these drones have been “battle tested,” others are less sanguine about their capabilities in a real conflict. Moreover, the People’s Liberation Army may attempt to use AI to enhance the **lethality** and **reach** of its surface ships and anti-access and area denial systems, which could hold U.S. forces at risk during a crisis. China’s current approach to territorial defense relies on hundreds of short- to long-range ballistic missiles that would target U.S. aircraft carriers and strike aircraft based in mainland Japan, Okinawa, South Korea, and as far away as Guam. As early as 2016, Wang Changqing, director of the General Design Department of the China Aerospace Science and Industry Corporation, claimed that the company’s next generation of cruise missiles would use AI to adapt to specific combat conditions, being capable of adjusting flight profiles and even warhead yield. Chinese defense industry engineers appear inspired by the U.S. Long-Range Anti-Ship Missile, which uses AI to improve accuracy and achieve more flexible targeting. Finally, the People’s Liberation Army is building a wide array of **autonomous vehicles** and extensive **undersea sensor networks** that make use of AI and **big-data analytics**. These systems may be useful in recording and transmitting the locations of U.S. undersea vehicles, and would be crucial to overcoming the Chinese military’s disadvantages in undersea warfare. Large unmanned submarines, such as the HSU-001 and Haishen-6000, could be equipped with sea mines to deny the **U.S. Navy access** to undersea space between the first and second island chains, or to restrict access to the Taiwan or Luzon Straits. Of course, AI has the potential to revolutionize Chinese operations in countless other ways, including through predictive maintenance, logistics, and back-office tasks not discussed in depth in this article. In any case, it is clear that the People’s Liberation Army is banking on the technology to create asymmetric advantages vis-a-vis the United States.

### 2ac – US AI better

#### Recent funding from the NDAA lifts US standards on AI development – programs are specifically created to check for ethics, education, security, privacy and rights

Capezza et al 21 – [Michelle Capezza is an executive compensation lawyer with more than 25 years of experience advising clients on ERISA, benefits, and executive compensation matters, including in connection with corporate transactions. Nivedita B. Patel provides legal counsel and strategic business advice on state and federal health care fraud and abuse laws and regulations, including HIPAA, the Stark Law, and the Anti-Kickback Statute. She served as Associate General Counsel of the largest independent, nonprofit, multispecialty physician practice in Washington, DC. In that role, she worked closely with executive leadership to structure and negotiate a variety of complex arrangements with hospitals and physician practice partners. Alaap B. Shah is a certified CSF Practitioner, by the Health Information Trust Alliance (HITRUST); a Certified Professional in Healthcare Information and Management Systems (CPHIMS), by the Healthcare Information and Management Systems Society (HIMSS); and a Certified Information Privacy Professional in the United States, by the International Association of Privacy Professionals (IAPP). He provided legal counsel and support to all agencies and programs under the Public Health Division of HHS. 2-8-2021, "U.S. Advances AI Innovation with NAIIA," Health Law Advisor, <https://www.healthlawadvisor.com/2021/02/08/u-s-advances-ai-innovation-with-naiia/#page=1> /kch]

After a Congressional override of a Presidential veto, the National Defense Authorization Act became law on January 1, 2021 (NDAA). Notably, the NDAA not only provides appropriations for military and defense purposes but, under Division E, it also includes the most significant U.S. legislation concerning artificial intelligence (AI) to date: The National Artificial Intelligence Initiative Act of 2020 (NAIIA). The NAIIA sets forth a multi-pronged national strategy and funding approach to **spur AI research, development and innovation** within the U.S., train and **prepare an AI-skilled workforce** for the integration of AI throughout the **economy** and **society**, and establish a pathway to position the **U.S. as a global leader** in the development and adoption of **trustworthy** **AI** in the public and private sectors. Importantly, the NAIIA does not set forth merely lofty goals, but rather, legislates concrete matters of critical importance for **economic and national security**. With a new Administration in place, and increasing global competition to develop AI and related guidelines, this is undoubtedly a pivotal time in history. AI will continue to transform every industry and workplace, and every facet of our day-to-day lives. It is important to become familiar with the NAIIA and consider its long-term impact for society, including the legal and ethical ramifications if the goals are not met. To understand the legal, regulatory and business challenges associated with AI, all organizations should gain a better understanding of the NAIIA and keep apprised of developments as the newly formed governing bodies created under the NAIIA begin their work.

National AI Initiative

The NAIIA aims to achieve its goals through a Presidential National AI Initiative involving coordination among the civilian agencies, the Department of Defense and the Intelligence Community and by engaging the public and private sectors through various key activities, including, but not limited to:

Funding, cooperative agreements, testbeds, and access to data and computing resources to support research and development;

Educational and training programs to prepare the workforce to create, use, and interact with AI systems;

Interagency planning and coordination of Federal AI research, development, demonstration, and standards engagement;

Outreach to diverse stakeholders such as citizen groups, industry, civil rights and disability rights organizations for input on initiatives;

Support for a network of interdisciplinary AI research institutes; and

Support opportunities for international cooperation around AI research and development.

Governance Structures

To drive toward these goals, the NAIIA mandates establishment of various governance bodies. First, on January 12, 2021, pursuant to the NAIIA, the White House Office of Science and Technology Policy (OSTP) established the National Artificial Intelligence Initiative Office (AI Initiative Office). Second, the NAIIA requires the creation of the Interagency Committee and various subcommittees on AI to coordinate federal activities and create a strategic plan for AI (including with regard to research and development, education and workforce training). Third, the law mandates that the Secretary of Commerce, in consultation with the Director of OSTP, Secretary of Defense, Secretary of Energy, Secretary of State, the Attorney General, and the Director of National Intelligence, establish a National Artificial Intelligence Advisory Committee comprised of appointed members representing broad and interdisciplinary expertise and perspectives to serve as advisors to the President and the Initiative Office on matters related to the AI Initiative. Fourth, the NAIIA also requires the Director of the National Science Foundation and the OSTP to establish the National AI Research Resource Task Force. In particular, the National Artificial Intelligence Advisory Committee will advise on **research** and **development, ethics, standards, education, security,** AI in the workplace and consequences of technological displacement, and other economic and societal issues addressed by the Initiative. Further, the body will advise on matters relating to oversight of AI using regulatory and nonregulatory approaches while balancing innovation and individual rights. The Committee will also establish a sub-committee related to AI in law enforcement and will address such issues as bias and proper usage of facial recognition, as well as **data security and use of AI consistent with privacy, civil and disability rights.**

National Academies AI Impact Study on the Workforce

The NAIIA also requires the National Science Foundation to contract with the National Research Council of the National Academies of Sciences, Engineering, and Medicine to conduct a study regarding the current and future impact of AI on the U.S. workforce. This study will include input from various stakeholders in the public and private sectors, and result in recommendations regarding the challenges and opportunities presented. The study will address the impact of increased use of AI, automation and related trends on the workforce, the related workforce needs and employment opportunities, and the research gaps and data needed to address these issues. The results of the study will be published in a report to several Congressional Committees and available publicly by January 1, 2023.

Funding of AI Initiatives

A hallmark of the NAIIA is its commitment to inject the economy with funding to boost AI efforts. In total, the NAIIA pumps approximately $6.4 billion dollars into AI activities under the Initiative. This funding is earmarked in a variety of ways. For example, the National Institute of Standards and Technology (NIST) received Congress’ authorization to spend almost $400 million over 5 years to support development of frameworks for research and development best practices and voluntary standards for AI trustworthiness, including:

Privacy and security (including for data sets used to train or test AI systems, and software and hardware used in AI systems);

Computer chips and hardware designed for AI systems;

Data management and techniques to increase usability of data;

Development of technical standards and guidelines to test for bias in AI training data and applications;

Safety and robustness of AI to withstand unexpected inputs and adversarial attacks;

Auditing mechanisms;

Applications of machine learning and AI to improve science and engineering; and

Model and system documentation.

NIST will also work on the creation of a **risk management framework**, standardized data sets for AI training, partnership with research institutes to test AI measurement standards and develop data sharing best practices. The National Science Foundation will receive almost $4.8 billion over 5 years to fund research and education in AI systems and related fields (including K-12, undergraduate and graduate programs), to develop and deploy trustworthy AI, workforce training and development of a diverse AI workforce pipeline. The National Oceanic and Atmospheric Administration will receive $10,000,000 in 2021 towards its AI Center. Subject to the availability of funding, the Director of the National Sciences Foundation will establish a program to award financial assistance for the planning and establishment of a network of AI Institutes for research and development and attainment of related goals as set forth under the NAIIA. These AI Institutes would be eligible to receive funding in order to manage and make available data sets for training and testing AI, develop AI testbeds, conduct specific research and education activities, provide or broker access to computing resources and technical assistance, and conduct other collaborative outreach activities. There have been tremendous advancements in the development of AI in recent years, exponentially greater than experienced in the early days of its development in the last century. AI is no longer a matter of science fiction and it is quickly becoming a mainstream reality with a major impact on every aspect of our lives. Through passage of the NAIIA, the U.S. has demonstrated its commitment to responsibly investing in the future of AI, including preparing the public, industry and the future workforce for the new world that has arrived. To learn more about the legal risks of and solutions to bias in AI, please join us at Epstein Becker Green’s virtual briefing on Bias in Artificial Intelligence: Legal Risks and Solutions on March 23 from 1:00 – 4:00 p.m. (ET). To register, please click here.

**US is the best country to lead in AI and must create global norms.**

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When the world’s first power plant switched on in 1882 — steam engines, fired by coal, lighting lower Manhattan — policymakers probably didn’t ask what this breakthrough would mean for America’s rivalry with Germany, the rising industrial and military power of the day. This century’s breakthrough technology is **artificial intelligence**, as consequential today as electricity was to the 19th century. Which nation leads on AI will lead on, well, everything. And that brings us to America’s rapidly escalating conflict with today’s rising power**, China.** AI will profoundly improve **human society**, affecting the daily lives of people in every corner of the world. If you’ve ever tried Google Translate and been frustrated (or amused) by the results, you can imagine the benefits of truly intelligent translations that communicate the full cultural or social meaning into a new language. AI researchers are on the path to achieving this sort of breakthrough, which will revolutionize the ease and clarity with which we communicate across borders, cultures and societies. And that’s just a start. **Artificial intelligenc**e is more important than any single country’s agenda. It’s a breakthrough that transcends **national rivalries**. And yet, we can be sure AI will be **weaponized** both literally and figuratively. The US and China are racing to establish AI advantage, **economic and military** alike. An early flashpoint in the fight is Huawei. The US is determined to prevent its allies from partnering with the Chinese telecommunications giant to build next-generation 5G wireless networks. We are fast entering a **new Cold War** where a modern-day bamboo curtain may separate **Chinese AI systems** from **Western systems**. It’s Betamax vs VHS with military reinforcement. Whose technology will dominate the AI era? Here’s the bottom line: no country is in a stronger position to craft a framework for global AI norms than America. We have the world’s largest **economy**, the most advanced **military** and competitive advantage in AI **research and education**. No country has played a more important role in establishing the rules governing global policymaking than America. A Center for Data Innovation study out this summer found that the United States is indeed ahead on AI — for now. But China is rapidly closing the gap. What next? It’s time for America to step up and create a **global framework for AI**. What we do in America should set a course for the rest of the world to follow. China included. Some politicians and policymakers in Washington and Silicon Valley believe the government should regulate AI as little as possible, leaving markets alone. This instinct is a useful counterweight to excessive regulation, but a simplistic view of the government’s economic and industrial contributions. And, we can be sure the Chinese approach will not be laissez-faire. The truth is the public sector plays multiple roles. In the case of new products or services, it acts as regulator, promoter, standard-setter, purchaser and rule-maker of global policy. Only the government can outline a comprehensive strategy for when and how to engage in all these AI policy parameters. Despite early efforts by the Trump Administration to call attention to AI, fitful steps by individual members of Congress and ad hoc contributions from cities and states, most of the policy framework for AI is not yet mature. For instance, there is no agreement about how to prepare for the adoption of AI in the workplace and no national privacy policy. We have no uniform rules for how consumer data must be safeguarded and how it may be used. We have no plan for multilateral coordination with other countries. Above all, there is quite literally no one in the United States in charge of its national AI policy. The time has come for a policy architecture that permits the United States — through its federal government, cooperating with business and civil society — to speak definitively, ethically and with detail about AI rules for everything from workers’ rights to responsible uses of facial recognition technology and autonomous drones in armed conflict. The US needs this not only for its own needs, but to provide a path for the rest of the world to follow. With thoughtful action, we can shape whose vision of the public interest will infuse AI: the liberal Western vision, or the Chinese, collectivist, authoritarian vision? For a Western definition of public interest to prevail, we need a set of international trade rules to guide the AI era. These rules should help open markets, protect intellectual property, minimize coerced tech transfer and do away with unfair government subsidies for AI. The Paris-based Organization for Economic Cooperation and Development has made initial, think tank-style recommendations and the World Economic Forum is helping keep AI on the agenda among global business leaders. These are a good start, but not sufficient. The American agenda should focus on the adoption of a uniform framework that protects users’ data without stifling commerce. It should include the right of citizens to learn what data is being collected on them, the right to say “no,” and sensible and workable rules for correcting and deleting data. Further, a new global AI standard should place strict limitations of the use of AI tools for intrusive government surveillance. A new AI framework should mandate accountability through mandatory disclosures to assure fairness, reliability, accuracy and assurance of diversity of data collection. This American agenda will pave a path for like-minded countries to follow. We can resist Chinese pressure, but only if we come together in common cause. The alternative to US leadership may be a **Balkanized constellation** of policies and regulations. Or, worse, a **Manichean world** where nations are forced to pick between the United States and China. It is time for the US to lead on AI in a way that the world will follow. The first step is to get behind a push at home for a national AI policy. We can’t afford to let others write the rules for this critical component of the global economy while we debate — or sleep.

### 2ac – Central Investment Fails

#### China’s approach to AI development creates spending issues and careless mindsets with no accountability

**Roberts et al. 20** (Huw Roberts, Oxford Internet Institute, “The Chinese Approach to Artificial Intelligence: an Analysis of Policy, Ethics, and Regulation”, June 17, 2020, AI & Soc 36, 59-77, Springer Link)//SW

Concerning local governments, the political structure within China creates a system of incentives for fulfilling national government policy aims. Short term limits for provincial politicians and promotions based on economic performance provide strong incentives for following centrally-defined government initiatives (Li and Zhou [2005](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR103); Persson and Zhuravskaya [2016](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR133)). Thus, local governments become hotbeds for testing and developing central government policy. The strength of this incentive system can be seen in the decision made by the administration of the city of Tianjin to establish a $5 billion fund for the development of AI, around the same time as the publication of the AIDP (Mozur [2017](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR123)). At the same time, it is important to recognize how the **absence of an effective accountability review of local government spending creates problems within this system**. Notably, it has facilitated a mindset in which **local politicians know that the central government will bail them out for failed projects**, leading to poor budget management (Ji [2014](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR78)). A clear example of this is the large-scale **port building initiatives** developed by provincial governments in East coast provinces that were **based more on prestige than any economic rationale**, and which led to overcapacity and disorderly competition (Zhu [2019](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR189)).

These incentive structures contain a subtle distinction. A national team has been selected to lead the research and development in a handful of designated strategic areas. Beyond these selected companies, there are few specific guidelines provided to industry and local state agents as to which items to pursue on the AIDP’s ‘wish list’. This enables companies to cherry-pick the technologies they want to develop and provides local governments with a choice of private sector partners for integrating AI into city infrastructure or governance (Sheehan [2018](https://link.springer.com/article/10.1007/s00146-020-00992-2#ref-CR145)). Subsequent documentation has emphasised the importance of strengthening organisation and implementation,[Footnote4](https://link.springer.com/article/10.1007/s00146-020-00992-2#Fn4) including between provinces and ministries, yet it is unclear how this coordination would function in practice. **Thus, the AIDP may work as a ‘wish list’, but the exact guidance, incentivisation and risk differ depending on the type of stakeholder**.

#### Chinese firms lack incentive to innovate and are stifled by uncertain regulation and business environment

Li et al. 21 (Daitian Li, Assistant Professor at the University of Electronic Science & Technology of China, Harvard Business Review, “Is China Emerging as the Global Leader in AI”, February 18, 2021)//SW

By many indicators, China is now on the global frontier of AI in terms of technological development and market applications. The unique technological, market, policy environments that Chinese firms face in the emerging AI sector have given them a window of opportunity to catch up with global leaders rapidly.

But, paradoxically, while China may have caught up in record time, the conditions that have allowed it to do so may impede its further development in AI.

For example, given the open science nature of AI and the advantages of being quick followers, **Chinese firms often lack strong incentives to invest in developing core AI technologie**s. Unlike in Western developed economies where companies are the primary holders of AI patents, in China, the **majority of AI patents are filed** by universities and research institutes, most of which **are government owned** or sponsored. However**, university-industry linkages in China are relatively weak**, and technology transfer remains rather limited. Overall, although aggregate AI research outputs (e.g., scientific publications, patents) are rising rapidly in China, **truly original ideas and breakthrough technologies are lacking.**

Further, the **uncertain business environment in China, coupled with the huge market for AI products and Chinese consumers’ enthusiasm to adopt them, leads companies and investors to favor applied AI research that can bring quick money** instead of more basic research that promises to have long-lasting impacts. At a more fundamental level, the research culture in China needs a great deal of improvement, [as many researchers have highlighted](https://doi.org/10.1126/science.1196916).

On the policy front, the **relaxed regulatory environment** has proved to be a double-edged sword. While some firms are bold enough to take advantage of such environment by aggressively pushing different AI applications to markets, others feel frustrated as **they don’t know what is allowed due to such policy uncertainty**. The chairman of Suzhou Blue Amber Medi-Tech, a medical device company, lamented that this uncertainty has led his company to decide to not touch any data that might fall into certain gray areas (e.g., use of personal health data for other commercial purposes). “Our current thinking is that if we don’t need to touch the data, we will not touch it. … But, if we do not touch the data, a significant part of the value [of the data] is not realized. So, from our company’s point of view, we do hope that the government will make the regulations clear sooner.”

### 2ac – US ahead now

**US is the most dominant in AI, and will continue in the future**

Naomi **Davies**, 11-18-20**21**, an FDI consultant at Investment Monitor"Index shows US is winning the AI race – but for how long?," Investment Monitor, https://www.investmentmonitor.ai/ai/ai-index-us-china-artificial-intelligence

The [US](https://investmentmonitor.ai/manufacturing/the-state-of-play-fdi-in-the-us) is the leading country in *Investment Monitor*‘s first ranking assessing investor friendliness within the AI space. The US holds first place in eight out of 17 indicators analysed, including metrics such as e-participation, investment in emerging technologies and software spending as a percentage of GDP.

According to figures from GlobalData, more than 8,300 AI deals were recorded in the US in the five years up to November 2021. This is more than triple the amount of its closest competitor [China](https://investmentmonitor.ai/asia-pacific/the-state-of-play-fdi-in-china-2), which recorded approximately 2,500 deals during the same period.

Notable deals in the US include California-based Teledyne Technologies’ [$8.2bn acquisition](https://www.flir.co.uk/news-center/corporate-news/teledyne-completes-acquisition-of-flir/) of Oregon’s FLIR Systems in May 2021. The newly named Teledyne FLIR develops intelligent sensing solutions for defence, industrial and commercial applications. When combined with the company’s cloud platform, its traffic system cameras use AI to predict traffic, preventing congestion and potential accidents.

More than 58,000 AI-related patents were registered in the US between November 2016 and 2021, cementing its status as a hub for innovation. It is also home to some of the world’s most successful tech companies including six of the ‘Big Nine’, the nickname for the nine tech companies dominating the AI landscape. The US members are [Amazon](https://investmentmonitor.ai/distribution/what-will-amazon-do-next), Apple, [Facebook](https://investmentmonitor.ai/ict-and-internet-infrastructure/what-will-facebook-do-next), [Google](https://investmentmonitor.ai/rd/what-will-google-do-next), IBM and Microsoft.

In addition, the US offers investors access to a rich pool of AI [talent](https://investmentmonitor.ai/global/fdi-drivers-and-the-quest-for-talent), bolstered by a substantial number of international researchers who move there for work. According to [MacroPolo’s Global AI Talent Tracker](https://macropolo.org/digital-projects/the-global-ai-talent-tracker/" \t "_blank), nearly 60% of top-tier researchers are employed by US institutions.

[Singapore](https://investmentmonitor.ai/singapore/the-state-of-play-fdi-in-singapore) ranks second in *Investment Monitor*‘s AI Index. The city-state scores highly across multiple indicators including its government’s promotion of investment in emerging technologies.

In June 2017, AI Singapore was established to boost the city-state’s AI standing. As part of a national programme, a total of $150m will be invested in 100 AI-related projects to solve real-world problems across finance, healthcare and city management by mid-2022.

The government’s National AI Strategy was launched in November 2019, listing five national AI projects to encourage social and economic growth in areas including transport and logistics, healthcare, education and safety and security. The Model AI Governance Framework was also established as part of the strategy, providing private companies with detailed guidance on moral and governance issues when implementing AI solutions.

In recent years, the city-state has become a hub for [industry 4.0](https://investmentmonitor.ai/manufacturing/industry-4-0-the-revolution-investors-cannot-ignore) and advanced manufacturing. More than three-quarters of Singapore’s total manufacturing output is in high and medium-high technology. Many key global suppliers including ABB and Siemens have established advanced manufacturing centres of excellence there.

Singapore is one of three Asia-Pacific countries to rank in the top ten of the AI Index, with [Japan](https://investmentmonitor.ai/japan/the-state-of-play-fdi-in-japan) and [South Korea](https://investmentmonitor.ai/south-korea/the-state-of-play-fdi-in-south-korea) placing fifth and sixth, respectively.

In 2017, the Chinese government announced its intention to become the world’s leading AI hub by 2030, with a strategy focused on investing in research and retaining domestic talent.

Despite this, China ranks outside of the index’s top ten countries. It scores poorly across various metrics including its ICT regulatory environment, software spending as a percentage of GDP and intellectual property receipts as a percentage of total trade.

The first stage of the AI development plan aimed to close the gap between China and the world’s leading AI hubs by 2020. Research from GlobalData shows this is not the case, with China still lagging far behind the US in terms of the number of AI-related deals, fillings, jobs and patents recorded.

While the US remains the current AI leader, it must remain vigilant to stay ahead. Research by the [Centre for Data Innovation](https://datainnovation.org/2019/08/who-is-winning-the-ai-race-china-the-eu-or-the-united-states/) suggests that the US should focus on increasing research funding and developing local talent.

#### **US maintains AI lead against China with strong universities, private sector, investment and start-up culture**

Tony Bertuca 18 (Tony Bertuca, Chief Editor of Inside the Pentagon, Inside Washington, “Inside the Army”, March 19, 2018, Vol. 30, No. 11, JSTOR)//SW

The **United States has a “healthy,”** but tenuous **lead over China in artificial intelligence** and quantum computing, according to the head of the Intelligence Advanced Research Projects Activity. Jason Metheny, the director of IARPA, an organization within the Office of the Director of National Intelligence tasked with running advanced research programs for the U.S. intelligence community, said the United States has a tendency to be “alarmist” when it comes to other nations’ technological advancements. “I’m not a catastrophist when it comes to this race between the U.S. and China,” he told reporters at breakfast in Washington. “I think the United States does have a healthy lead. It doesn’t mean that we’re guaranteed to have that lead forever and regardless of policy or investment,” he continued. “This is a lead that was **earned through it being a priority within the science and technology organizations**. We need to continue recognizing it’s important to maintain the lead.” Metheny said China is the United States’ strongest competitor globally in machine learning and has a “very thoughtful” AI strategy, which calls for becoming a global leader in the arena by 2025. “It’s basically a Chinese translation of the U.S. AI plan, which I worked on -- there were a lot of familiar passages,” he said. “But they’ve also introduced an implementation plan for that AI strategy that includes quantitative milestones in speech recognition, imagery analysis, video analysis that are, I think, realistic, but also ambitious.” China also enjoys tighter civil-military integration than the United States does, which combines to provide a whole-of-nation effort. Still, Metheny said, such government-directed integration can be a disadvantage. “I think that the United States has an advantage in its competitive landscape,” he said. “We have the **strongest universities** by far. We have the **strongest start-up culture and we also have risk-tolerant companies like Google and Microsoft and Amazon and Open AI that are willing to fund very high-risk research that may not pay out for five to 10 years**.” Additionally, Metheny said all of IARPA’s unclassified research contracts are awarded competitively. “**We engage our researchers in tournaments in which multiple research teams compete against one another** toward a common set of technical goals that have highly ambitious milestones,” he said. IARPA is also the world’s largest source of academic research funding in quantum computing, which could lead to leap-ahead technological advancements in everything from global food production to data encryption and code breaking. “This is an area where I think the United States has a lead,” he said. “**China is investing, but not at the levels the United States is**.”

#### Chinese business ecosystem cannot keep up with US AI specialists

**Reshetnikova 21** (Marina S. Reshetnikova, Professor (Associate) at the Department of Economic and Mathematical Modeling, Peoples' Friendship University of Russia, Research and Innovation Forum 2021, “Future China: AI Leadership by 2030?”, September 21, 2021, Springer Link)//SW

Also, Chinese scholars published 28% of all works in different AI techniques (for scholars from the European Union, this figure is 27%, and for the United States, 23%) [[15](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR15)]. However, the **scientific value of the Chinese AI research shaft is not great. American publications in this area have a citation index of 50% higher** than Chinese. Among the patents filed, 87% are for utility models and industrial designs, and only 2% for fundamental research [[17](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR17)]. Moreover, the **number of national AI talents does not satisfy even the Chinese government**. According to the MIIT, about 5 million specialists are needed to successfully solve the national AI sector’s tasks [[18](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR18)].

Nevertheless, it will be i**mpossible to solve scientific and especially practical competence lag so quickly. The reason is the immaturity of the Chinese AI business ecosystem**. American AI talents have gone through many project cycles. The number of **American specialists employed in AI with over ten years of experience is** approaching 30% and amounts to **850 thousand** people [[18](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR18)]. There are **only 50 thousand such specialists in China**, and **43% came from the United States** [[18](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR18)]. The practice of attracting foreign came from the United States [[18](https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-030-84311-3_42#ref-CR18)]. The practice of attracting foreign specialists to improve the national innovation sector’s scientific competence started in 2008, with the launch of the “Thousand Talents Plan”.

### 2ac – China isn’t transparent

#### Unlike China, the US establishes reports to address the transparency and trustworthy of AI with ethical standards

Ota 20 [Yasu Ota has more than 30 years of journalism experience; has spent more than half of career as foreign correspondent in Washington DC and Frankfurt, Germany, covering major business and financial events, including the Asian Economic Crisis, the US-Japan trade dispute and European economic integration.,, 8-23-2020, "China's AI tech leaves aside questions of ethics," Nikkei Asia, <https://asia.nikkei.com/Spotlight/Comment/China-s-AI-tech-leaves-aside-questions-of-ethics> /kch]

TOKYO -- Artificial intelligence, like other forms of technology, reflects the culture and values of the people who create it and those who provide the data frameworks upon which it is built. AI technology developed in different countries or organizations may thus offer different answers to the same problem.

On June 25, the National Security Commission on Artificial Intelligence, an independent U.S. government body, released, "The Role of AI Technology in Pandemic Response and Preparedness: Recommended Investments and Initiatives." The report makes 10 recommendations, including calls for the creation of a federal "Pandemic Preparedness Dataset" and investment in "the digital modernization of state and local health infrastructure required for effective disease surveillance." It was the commission's third report published since May 6 on AI and the government's response to the COVID-19 pandemic. The commission's so-called COVID-19 White Paper Series deals with **fundamental ethical issues** related to the use of AI in policy **responses to the crisis**, including **privacy** and the **responsibilities** of software developers. The commission has tried to help establish **clear** government positions on these issues, and to present them to Congress and the American people. This is time-consuming, but despite the urgency of the pandemic, the government must follow democratic processes when deciding how to spend taxpayer money. China, by contrast, has been very quick to wield AI in its battle against the disease. AI has been used to identify individuals in contact tracing and to predict how the virus spreads. Infection rates for the novel coronavirus are far over 15,000 per million people in the U.S. and Brazil, as of Thursday. The official figure for China, where the pandemic started, is 62, although there is some doubt about the credibility of the Chinese data. There is no denying that a society that puts the collection of personal data needed to track a virus ahead of the protection of privacy can, in theory, do a better job containing an outbreak of infectious disease. The pandemic has brought to the fore wide differences in values and cultural norms between nations. Shigeo Kawashima, an associate professor at Aoyama Gakuin University who studies the interaction between society and technology, believes the world has reached a historical crossroads with regard to the evolution of AI. The question, Kawashima says, is "which country will be able to build an AI-driven society where people, not machines, play the central role."

Human interaction with technology is not culturally universal or value-neutral.

"Western society, which is based on monotheistic Christianity and Judaism, and Chinese society, which is based on materialism and Marxism, naturally have different ethical systems," Kawashima said. An emerging field of research called explainable AI, or XAI, highlights this. XAI refers to a way of applying AI that ensures the process of AI-based decision-making can be understood by humans. XAI can "explain" how it makes specific decisions.

The U.S. Defense Department's Defense Advanced Research Projects Agency, or DARPA, is leading the way in this area of research. The U.S. military is keen to develop computer systems that produce **transparent explanations for the decisions made by AI systems**, even though they tend to be reluctant to disclose their activities in general. This is because autonomous weapons systems and even autonomous planning of military operations are already at the stage of practical application in the U.S. If machines used by the military make choices that affect human lives -- whether to bomb a particular target, say -- the military has a **responsibility to explain** how and why those decisions are taken. The military must also fully understand and be able to explain how and why specific decisions have been made so it can **trust** the actions of AI systems themselves. In other words, a military can't simply say, "Oh sorry, the Ai decided it, not us human." XAI is a means of tackling the "black box" problem in machine learning, in which even system designers cannot explain how their AI arrives at specific decisions. To take an innocuous example, imagine a system that uses AI to determine whether an image is that of a cat or a dog. To create such an AI system, engineers train computers to recognize common patterns using a huge number of images of cats and dogs, exposing them to numerous variations, and specifying whether the image in question is a cat or a dog each time. As they are shown millions of images, computers learn to tell cats and dogs apart. But using this method, even when the AI correctly identifies an image as a cat or a dog, one cannot say how the AI has done so. Decision-making based on machine learning is inherently a "black box." AI is an opaque technology by its nature. Different societies breed different kinds of AI. Chinese AI will certainly become increasingly clever at dazzling speed because of the huge amounts of data available to AI engineers in the country. Marlon Technologies demonstrates its artificial intelligence capabilities in Shenzen, in 2018. China is increasingly applying AI in health care. (Photo by Yasu Ota) According to a survey by the Japan Patent Office at the end of July, Chinese entities filed 6,858 AI patent applications in 2017, overtaking the U.S., with 5,954 filings. The U.S. has lost its long-held overwhelming edge in AI. With its patent applications doubling every year, China is on track to become an AI superpower.

Most AI patent applications made in China deal with practical machine learning; few are related to XAI. China may be first country in the world to develop black-box AI technologies for health care, autonomous driving, criminal trials, personnel decisions and other areas. But China's approach to AI research and development, which is totally **divorced from ethical considerations**, inevitably raises concerns. In April 2019, the European Commission's High Level Expert Group on Artificial Intelligence published its "Ethics Guidelines for Trustworthy AI," which establish seven key principles, including transparency, diversity, nondiscrimination and fairness, and accountability. In Japan and the U.S., a raft of big companies including Google, Sony and Fujitsu have established their **own** **ethical standards** for AI because AI businesses will not be viable without the trust of users. Hirokazu Anai, senior director of Artificial Intelligence Lab at Fujitsu Laboratories, once said, "We have to prove to our customers that our AI is safe enough and trustworthy." In China, a professional committee operating under the Ministry of Science and Technology in June issued a set of eight principles for next-generation AI governance. The principles include respect for privacy, but it is hard to give much credence to them, given China's authoritarian government. In a nutshell, a society that places little value on human dignity **cannot** produce human-centric AI technology.

#### **Chinese tech giants pose harms to consumers – steal personal data for profit**

Murphy and Tong 21 – **[**Flynn Murphy and Qian Tong. Caixin Global provides the latest China news headlines on politics, economy, business and finance with insight and in-depth analysis. 1-14-2021, "In Depth: Pushback Against China Tech Giants Grows With Accusation of Algorithmic ‘Bullying’," No Publication, <https://www.caixinglobal.com/2021-01-14/in-depth-pushback-against-china-tech-giants-grows-with-accusation-of-algorithmic-bullying-101650876.html> /kch]

BEIJING (CAIXIN GLOBAL) - A government-backed Chinese consumer group has accused the nation's tech giants of using their data-based algorithms to **"bully" consumers** and **put them at a disadvantage**. At a symposium on the topic held by the China Consumers Association (CCA) on Jan. 7, the group released a three-section, 14-point document outlining the ways data-driven algorithms impinge the rights of consumers in their interactions with large tech platforms, and calling for beefed up powers for regulators. It's the latest sign that the technology broadly described as "artificial intelligence" - and specifically algorithm-based advertising and sales - is shaping up as a new front in the country's push to control big tech. And it comes amid a broader national conversation about how tech giants use their technology to **control the information** available to individual consumers, and **leverage their access** to **personal data for profit**.

Among the grievances listed by the CCA are complex sales promotions that obscure the true costs of a product, targeted search results that create information asymmetry, and the practice of hiding negative reviews, which it says leaves consumers **"squeezed by algorithms and the targets of technological bullying."** Of particular concern to the group is the practice of "algorithmic price discrimination," where the personal data of an online shopper is used to calculate different prices for different individuals based on what they might be willing to pay.The CCA proposed a series of remedies, including establishing a special organisation to police algorithmic ethics and investigate "unfair algorithms," and equip government departments with the ability to regulate them. It also controversially calls for tech giants to be forced to turn over what has been described as their "secret sauce" - the proprietary algorithms which underpin their businesses - to regulators in the case of disputes. The document released by the government-backed group is seen as the latest evidence China is preparing to publish a draft regulation on artificial intelligence and algorithms. The CCA called on "all sectors of society to work together for … the fair and reasonable application of algorithms, and prevent operators from using algorithms to do evil."