# DA – AI Arms Racing

## Notes

### Explanation

#### This is a supplement for the AI Bad DA in the AI case negative.

## Negative

### 1NC – DA [China]

DA – AI Arms Race

#### China has moved to take global control global AI standards ― SDO investment has closed a waning gap with the west

Copan & Gupta 22 (Walter G. Copan, holds a **PhD** in physical chemistry from Case Western Reserve University and a certificate in advanced business administration studies from Harvard Business School, recipient of the 2021 Bayh-Dole award for innovation and technology transfer from AUTM, senior advisor and cofounder of the Renewing American Innovation Project at CSIS, former director (16th) of the National Institute of Standards and Technology; Kirti Gupta, holds a **PhD** in economics from the University of California, San Diego, senior advisor at CSIS, chief economist and vice president of Qualcomm; "Renewing U.S. Leadership in Standards", 6-13-2022, CSIS, https://www.csis.org/analysis/renewing-us-leadership-standards, DOA: 6-27-2022)//ATJ \*SDO = Standards Development Organization

China’s Standards Challenge

As the main U.S. competitor on the world stage, China recognizes that global leadership in standards provides distinct commercial and national security advantages. The China Standards 2035 plan, notably, is designed to take leadership or control of the process that sets global standards for emerging technologies like 5G, internet of things (IoT), and AI—as reflected in the title of a recent Wall Street Journal article, From Lightbulbs to 5G, China Battles West for Control of Vital Technology Standards.

There are several mechanisms through which Chinese firms and state-backed enterprises are increasing participation, leadership, and control of certain standards:

Creating strategic linkage/investment incentives in China: China’s government is prioritizing investments on standards-related skillsets, along with industrial policy goals for taking global leadership in standards.

Growing SDO participation: China is increasing its participation in SDOs, closing the gap with the number of delegates from the United States and the European Union. For example, the number of delegates affiliated with Chinese entities participating in 3GPP— the 3rd Generation Partnership Project standards body responsible for design on 5G standards—has grown tenfold since 2000.

Gaining SDO leadership roles: China has sought to promote the election of its representatives for important leadership positions at SDOs—for example, to the 3GPP.

Manipulating the value of standards-related technologies: China has sought in some cases to change the rules of standards bodies, even after the standards have been established. China is also using anti-suit and anti-anti-suit injunctions (for example at the U.S.-based Institute of Electrical and Electronics Engineers) to set global rates and provide favorable rates for domestic firms.

Establishing China-led processes: China is trying to establish a China-led process for critical standards by excluding non-Chinese firms in the first round of standards development. For some critical standards, such as the future version of how the internet, IoT, and connected cars, various China-only standards working groups now exist to exert a growing influence on how these standards are shaped.

Taking the Initiative to Maintain a Rules-Based Standards Ecosystem

U.S. policymakers must take specific actions with clear policy objectives to preserve a rules-based global standards ecosystem, adhering to and maintain a market- and consumer-driven innovation agenda (rather than one that is state-driven), and technology selection based on consensus and merit.

Various parts of the U.S. administration have recognized the importance of maintaining U.S. leadership in standards that are critical for economic growth and national security:

Executive action: Last year, for example, the National Security Commission on Artificial Intelligence (NSCAI) released a final report making critical recommendations for maintaining U.S. leadership in AI standards. Various actions by the administration have underlined the importance of maintaining leadership in 5G standards, including the president’s Executive Order on “Promoting Competition in the American Economy” in July 2021.

Cooperate with allies and strategic partners: The United States should work with its allies and strategic partners to establish and maintain a rules-based ecosystem globally. Currently, this should include greater attention to cooperation on standards issues through the U.S.- EU Trade and Technology Council and the Quad initiative with Australia, India, and Japan.

#### **BUT Western AI regulation overshoots and constricts developmental pace ― ensures we lose the AI arms race**

Straub 21 (Jeremy Straub, **PhD**, Assistant Professor in the North Dakota State University Department of Computer Science and a NDSU Challey Institute Faculty Fellow; "Would Regulation Prevent AI From Becoming an Evil Overlord?", 10-1-2021, University of North Dakota, https://dda.ndus.edu/ddreview/would-regulation-prevent-ai-from-becoming-an-evil-overlord/, DOA: 4-19-2022)//ATJ

AI IS GOING TO HAPPEN—HERE?

Many discussions of U.S. regulations seem to presume that American laws can restrict or prevent AI development. However, this is demonstrably not the case. While the U.S. has led the world in the development of key computing technologies and several of the world’s largest software companies[30]—Microsoft, Google, Oracle, IBM, Apple and Adobe—are American firms, the U.S. is not the only place where AI is being developed. Russian president Vladimir Putin has heralded AI as “the future, not only for Russia, but for all humankind.”[31] In September 2017, he went as far as to tell Russian students that the nation that “becomes the leader in this sphere will become the ruler of the world.”[32]

With Russia and other nations embracing AI,[33] nations that don’t innovate in AI technologies—or worse, those that actually restrict its development—run the risk of falling behind and not being able to compete with the countries that promote AI development.[34] Advanced AIs can create advantages for a nation’s businesses and its defense. Nations without AI or with less mature AI systems might be placed at a severe disadvantage and forced to buy systems with whatever capabilities the more advanced nations are willing to let their firms sell to other countries. While the state of nations after the introduction of AI is inherently unclear, one thing is apparent: restricting AI development in the U.S. won’t stop it from being developed. In fact, this may make it far more likely that the eventual winning AI systems won’t respect our societal values, because they have been developed by another country or group that doesn’t share them.

#### Which causes rivals to hijack control of AI norms at the public and private levels ― greenlighting unrestricted AI development

Michael Auslin 18, 10-19-2018, [MICHAEL AUSLIN is the Williams-Griffis Fellow in Contemporary Asia at the Hoover Institution at Stanford University, Can the Pentagon Win the AI Arms Race?, https://www.foreignaffairs.com/articles/united-states/2018-10-19/can-pentagon-win-ai-arms-race, accessed 6-27-2022//BMNT]

When the stingray-shaped object took off and landed lightly on the deck of the USS George H. W. Bush in July 2013, some hailed it as a moment in aviation history to rank with the first heavier-than-air powered flight, at Kitty Hawk, in 1902. The X-47B drone flew itself, decided its own flight path, and completed on its own a mission given to it by humans. The dawn of autonomous weapons systems seemed undeniable. Yet the drone was hardly independent, as humans still programmed all its possible decisions, leaving it to choose from a menu of options. Half a decade later, experts are making new claims that the future of warfare is about to change. Today, artificial intelligence (AI) is the new frontier of military competition, and with China and Russia making headway in the field, the Pentagon is starting to rush, some say belatedly, into the new era.

THE NEXT WAVE OF AI

In a move that reflects the reliability of current machine learning capabilities, the U.S. Department of Defense recently awarded Booz Allen Hamilton a contract worth $885 million over five years to introduce the first large-scale use of AI systems to analyze the flood of data provided by drones, as well as to diagnose diseases from medical data. The Defense Intelligence Agency (DIA), meanwhile, is building the Machine-Assisted Analysis Rapid-Repository System (MARS), an information database to make the interaction between human analysts, the cloud, and automated data processing systems more efficient.

In September, the Defense Advanced Research Projects Agency (DARPA), which helped kick-start the AI revolution back in the 1960s, announced an even more ambitious initiative: a $2 billion program to foster the next era of AI technologies, or “third wave” of AI. Unlike the first two waves of AI, which made possible first narrowly defined machine-conducted tasks and later statistical pattern recognition based on large data sets, the new initiative, which DARPA is dubbing AI Next, will focus on making it “possible for machines to adapt to changing circumstances.” The goal, according to the agency, is to enable better decision-making in “complex, time-critical battlefield environments.” That could mean quicker identification of threats, faster and more precise targeting, or creating flexible options for commanders based on changing conditions on the battlefield.

Although half a century old as a concept, artificial intelligence is still at a relatively immature state of development. The Booz Allen contract focuses on the most proven level, what is known as “narrow AI,” where a computer program focuses on a particular task, often automating what humans previously did (think of a spam filter for e-mail). This type of AI has been transforming the health field, allowing for quicker diagnosis of disease, and the world of surveillance, through facial and voice recognition. The Defense Department is looking for cost- and time-saving measures that will free up humans for more complex tasks. Yet this level of AI is still dependent on much human input, what is known as “supervised learning,” where the machines use preprogrammed algorithms designed for carrying out a particular task. An example would be distinguishing from video footage a machine gun-carrying motorcycle rider from an unarmed civilian.

The DARPA project is far more ambitious. According to DARPA Director Steven Walker, AI Next seeks “to explore how machines can acquire human-like communication and reasoning capabilities, with the ability to recognize new situations and environments and adapt to them.” The goal, as explained on the AI Next website, is to achieve the “far greater levels of intelligence” that machines will need in order to allow for more autonomous weapons systems, going far beyond the types of human-controlled drones that have been part of the military arsenal for years.

The next generation of AI that DARPA proposes to develop—“contextual reasoning”—relates to what AI scientists call “unsupervised learning,” where algorithms themselves try to identify patterns in data. Neural networks (also known as “deep learning”) can carry out classification and prediction tasks by linking thousands of processing nodes that comprise machine learning programs and algorithms. The processes they follow are not pre-programmed, but allow them to learn from observation; for example, by comparing thousands of pictures of buildings with a known example, neural networks can learn what is a castle as opposed to a hut. Neuroevolution goes beyond unsupervised learning, to enable AI to develop more effective AI, as though Frankenstein’s monster were put in charge of creating his own bride. The holy grail for AI programmers is to move from correlative outcomes, which is essentially what all AI today does, to causative outcomes that in essence include intuition and cognitive insight. Indeed, DARPA’s objective is for the machines that spring from the project to become reliable colleagues to humans.

Washington is just now beginning to explore the policy implications of the next wave of AI, ranging from technological feasibility to human impact to ethical questions. Few in U.S. policymaking circles have any but the most rudimentary understanding of what AI is or how the field might develop. They are, however, keenly attuned to the threat of adversarial nations leapfrogging American AI capabilities. At the top of the list of concerns is China, followed closely by Russia. China is already considered a world leader in AI, has committed over $2 billion to building an AI industrial park, and hopes to foster a $150 billion AI industry in less than a generation; Russia, while seen as farther behind in the AI race, is beginning a comprehensive plan to increase automation throughout society and the armed forces, establish a national center for AI development, and begin a series of AI war games to understand the technology’s potential on the battlefield. Because of developments such as these, many worry that the United States is already playing a catch-up game on AI, especially with China.

As the U.S. government struggles to come up with a comprehensive national AI plan, the Pentagon is moving forward on its own accord. This summer, the Defense Department announced the establishment of the Joint Artificial Intelligence Center (JAIC), under the direction of the Department of Defense’s chief information officer. With support from the advisory Defense Innovation Board, chaired by former Google head Eric Schmidt, the center will study the role of AI and machine learning in military systems. More specifically, it will coordinate work on high-priority AI initiatives, increase collaboration with the private sector and academia, and try to develop the next generation of AI talent. The council will also likely support the work of the Defense Innovation Unit—Experimental (DIUx), which was established near Silicon Valley in 2015 to partner with civilian companies to introduce high-tech, nontraditional approaches for DOD programs, many of which employ AI processes. Examples of DIUx partnerships include one with a company to identify, track, and autonomously remove rogue drones from the sky, and another to use algorithms to predict mechanical breakdowns in Army armored fighting vehicles for preventive maintenance.

WILL WASHINGTON MAINTAIN ITS EDGE?

Given the rapid pace of development in the field, the key to U.S. success in AI may well lie with public-private partnerships of the kind fostered by DIUx. Yet opposition at Google and other tech firms to working with Washington could leave the U.S. government searching for willing partners. Google CEO Sundar Pichai, for example, promised this summer that Google would never work on militarized applications of AI. This pledge arose in response to the backlash to the company’s cooperation in the U.S. Air Force’s Project Maven, an initiative to automate pattern recognition from the massive amount of moving and still imagery captured by drones and satellites. There is little question that the Pentagon’s ultimate interest in AI is to be able to operate more effectively and efficiently, and that means more destructively. Although the counterculture that gave rise to Silicon Valley’s tech leaders may have mellowed into self-interested middle age, working with the U.S. military may remain a bridge too far.

Such reticence could become a devastating weakness for the United States. Silicon Valley above all knows that technology never sleeps, and the current lack of cutting-edge AI investment in the defense industry could leave Washington at a decided disadvantage in the next generation’s arms race. To avoid falling behind, the first priority for the Pentagon is to find or fund AI startups that are willing to work with the military and are doing cutting-edge research.

China may have access to the massive amounts of data needed to refine algorithms for faster targeting, pattern recognition, and decision-making, but it continues to lag on the basic technologies that power AI, including hardware development. This means that for now the United States retains a slim edge over China in the AI arms race, a period in which it can decisively integrate AI into emerging weapons systems. Thus, the second priority for the Pentagon should be to push ahead as quickly as possible on integrating well-proven AI technologies, such as in pattern recognition, into operational capabilities. A third priority, as DARPA proposes, is sponsoring basic research into the third generation of AI, so as to position the military for a potentially AI-centric future in certain areas in 20 or 30 years’ time.

Absent these steps, Washington’s edge will diminish over time, and perhaps more quickly than most anticipate. As Chinese armed forces operate more widely within the Indo-Pacific region and beyond, its future AI prowess may make it an even more formidable force than it already is thanks to decades of conventional modernization. An AI-dominant Chinese military would in turn change the calculations of nations large and small, potentially leading them to embrace accommodation, so as to avoid confrontations with Beijing.

Arms races are ugly things, but throughout history, no one has successfully contained technological advances that make for more lethal militaries. Only those nations that are unable to protect their interests fail to adapt. The age of artificial intelligence is upon us, and in a world of ever more assertive authoritarian powers, the U.S. military will have to embrace and incorporate the new technologies into its arsenal as quickly and thoroughly as it can.

#### Extinction ― autocratic norms create a cascade of risks

Jain 19—(senior fellow with the Scowcroft Center for Strategy and Security, where he oversees the Atlantic Council’s Democratic Order Initiative and D10 Strategy Forum). Ash Jain and Matthew Kroenig. 10/30/2019. “Present at the Re-Creation: A Global Strategy for Revitalizing, Adapting, and Defending a Rules-Based International System.” Stowcroft Center for Strategy and Security. Atlantic Council Strategy Papers. <https://www.atlanticcouncil.org/wp-content/uploads/2019/10/Present-at-the-Recreation.pdf>. Accessed 7/27/21.

The system must also be adapted to deal with new issues that were not envisioned when the existing order was designed. Foremost among these issues is emerging and disruptive technology, including AI, additive manufacturing (or 3D printing), quantum computing, genetic engineering, robotics, directed energy, the Internet of things (IOT), 5G, space, cyber, and many others. Like other disruptive technologies before them, these innovations promise great benefits, but also carry serious downside risks. For example, AI is already resulting in massive efficiencies and cost savings in the private sector. Routine tasks and other more complicated jobs, such as radiology, are already being automated. In the future, autonomous weapons systems may go to war against each other as human soldiers remain out of harm’s way.

Yet, AI is also transforming economies and societies, and generating new security challenges. Automation will lead to widespread unemployment. The final realization of driverless cars, for example, will put out of work millions of taxi, Uber, and long-haul truck drivers. Populist movements in the West have been driven by those disaffected by globalization and technology, and mass unemployment caused by automation will further grow those ranks and provide new fuel to grievance politics. Moreover, some fear that autonomous weapons systems will become “killer robots” that select and engage targets without human input, and could eventually turn on their creators, resulting in human extinction. The other technologies on this lisgt similarly balance great potential upside with great downside risk. 3D printing, for example, can be used to “make anything anywhere,” reducing costs for a wide range of manufactured goods and encouraging a return of local manufacturing industries.61 At the same time, advanced 3D printers can also be used by revisionist and rogue states to print component parts for advanced weapons systems or even WMD programs, spurring arms races and weapons proliferation.62 Genetic engineering can wipe out entire classes of disease through improved medicine, or wipe out entire classes of people through genetically engineered superbugs. Directed-energy missile defenses may defend against incoming missile attacks, while also undermining global strategic stability.

Perhaps the greatest risk to global strategic stability from new technology, however, comes from the risk that revisionist autocracies may win the new tech arms race. Throughout history, states that have dominated the commanding heights of technological progress have also dominated international relations. The United States has been the world’s innovation leader from Edison’s light bulb to nuclear weapons and the Internet. Accordingly, stability has been maintained in Europe and Asia for decades because the United States and its democratic allies possessed a favorable economic and military balance of power in those key regions. Many believe, however, that China may now have the lead in the new technologies of the twenty-first century, including AI, quantum, 5G, hypersonic missiles, and others. If China succeeds in mastering the technologies of the future before the democratic core, then this could lead to a drastic and rapid shift in the balance of power, upsetting global strategic stability, and the call for a democratic- led, rules-based system outlined in these pages.63

### 1NC – DA [Russia]

#### Russia is pushing for leadership on AI usage― the US is barely staying ahead

Tadjdeh 21 (Yasmin Tadjdeh; "Algorithmic Warfare: Russia Expanding Fleet of AI-Enabled Weapons", 7-20-2021, National Defense, https://www.nationaldefensemagazine.org/articles/2021/7/20/russia-expanding-fleet-of-ai-enabled-weapons, DOA: 4-19-2022)//ATJ [language edited]

The nation [Russia] wants to use AI for electronic warfare, intelligence, surveillance, reconnaissance and strategic decision-making processes as leaders pursue information dominance on the battlefield, Groen said.

While Russia is not a leader in commercial and academic AI research — as the United States and China are — it would be a grave mistake for the Pentagon to take its eyes off the threat, he said

“Russia was not a major leader in the development of the internet or computer networking, but Russia has become a leader in weaponizing those technologies for advanced cyberattacks and cybercrime capabilities,” he noted.

The Russian military has taken significant steps to reform and improve the organization of its research and development enterprise, he noted. This was done in part because Moscow believed its previous structures were stifling innovation in technology areas such as AI.

The scale of these reforms — such as creating a new advanced R&D organization modeled on the Pentagon’s Defense Advanced Research Projects Agency — demonstrates the nation’s seriousness about fielding an AI-enabled fighting force, he said.

Vice Chairman of the Joint Chiefs of Staff Gen. John Hyten noted that Russia has invested enormous resources into the development of artificial intelligence, big data and software technologies.

The country is moving quickly across many areas, including nuclear weapons, space and cyber, he said during remarks at the Defense Department’s AI Symposium in June. Embedded in each of those elements is new software, processing and artificial intelligence systems.

“Russia is a significant threat, especially in the near term,” he said. “It is a challenge to not just keep up with them but stay ahead of them.”

#### **BUT Western AI regulation overshoots and constricts developmental pace ― ensures we lose**

Straub 21 (Jeremy Straub, **PhD**, Assistant Professor in the North Dakota State University Department of Computer Science and a NDSU Challey Institute Faculty Fellow; "Would Regulation Prevent AI From Becoming an Evil Overlord?", 10-1-2021, University of North Dakota, https://dda.ndus.edu/ddreview/would-regulation-prevent-ai-from-becoming-an-evil-overlord/, DOA: 4-19-2022)//ATJ

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#### Russia will capitalize on AI development, zeroing norms and greenlighting unrestricted AI development

Konaev et al. 19 (Margarita Konaev; Samuel Bendett; "Russian AI-Enabled Combat: Coming to a City Near You?", 7-31-2019, War on the Rocks, https://warontherocks.com/2019/07/russian-ai-enabled-combat-coming-to-a-city-near-you/, DOA: 4-19-2022)//ATJ

It should be clear by now that Russia aims to master the psychological dimension of information operations, focused on undermining the state institutions and belief systems of its adversaries. And technological advances in AI have the potential to “hyperpower Russia’s use of disinformation.” It’s well known that Russian influence operations and election interference campaigns leveraged machine learning to tailor propaganda to specific audiences based on race, ethnicity, ideology, demographics, and geographic location. Yet, while the thousands of fake and stolen social media accounts deployed during these operations were manufactured manually, AI can be used to automate, accelerate, and scale synthetic accounts and content. Another worrisome example of an emerging technology the Russian defense establishment could potentially use in information operations entails recent developments in text-generation technology that mimics how humans write. Experts are concerned that this technology will allow governments and non-state actors to spread disinformation on a tremendous scale, as well as that disinformation campaigns can evade detection by generating subtly different content. In this sense, developments in AI could make Russian information operations more efficient, far-reaching, and widespread.

Russia has a long history of waging information warfare. But modern technology not only furthers its reach and magnifies its impact but also arguably renders its democratic adversaries — with their open societies and free flows of information — more vulnerable than ever before. Looking ahead, Russia is likely to continue leveraging machine learning and advances in natural language processing to refine its micro-targeting of malicious content and to construct emotionally sophisticated and relevant propaganda for more effective information operations in future conflicts, including, and especially, those conflicts that entangle Western forces in urban fighting.

Key Takeaways

Predicting how AI will impact the future of strategic competition and warfare is difficult because it requires us to assess technologies that are still mostly immature. That said, contextualizing militarily relevant AI applications and other emerging technologies within the appropriate operations environment is the best way to understand their potential impact on the battlefield.

More extensive AI and autonomous capabilities infused into Russian armed drones and unmanned ground vehicles, as well as the incorporation of AI as an enabler of rapid command, could potentially undermine the U.S. military’s ability to maintain overmatch in multi-domain battle. Overall, Russian advances in military applications of AI threaten to erode American technological and operational advantages on future battlefields, including in urban warfare.

Russia is also likely to capitalize on breakthroughs in AI, big-data analytics, and machine learning to conduct more targeted, scalable, and impactful information operations, which should alarm both civilian and military U.S. decision-makers. Thus far, the bulk of commercial and defense investments in the application of AI for detecting, analyzing, and countering disinformation have largely focused on identifying and filtering out malicious content and blocking bots. These are, at best, damage control measures. Moreover, such an approach is inherently limited given the speed within which disinformation and propaganda spread, and the significant and often irreversible damage such disinformation can cause for public opinion and perceptions of legitimacy in urban military operations.

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Perhaps the greatest risk to global strategic stability from new technology, however, comes from the risk that revisionist autocracies may win the new tech arms race. Throughout history, states that have dominated the commanding heights of technological progress have also dominated international relations. The United States has been the world’s innovation leader from Edison’s light bulb to nuclear weapons and the Internet. Accordingly, stability has been maintained in Europe and Asia for decades because the United States and its democratic allies possessed a favorable economic and military balance of power in those key regions. Many believe, however, that China may now have the lead in the new technologies of the twenty-first century, including AI, quantum, 5G, hypersonic missiles, and others. If China succeeds in mastering the technologies of the future before the democratic core, then this could lead to a drastic and rapid shift in the balance of power, upsetting global strategic stability, and the call for a democratic- led, rules-based system outlined in these pages.63

### 2NC – T/C – AI Controls

#### Regulations fail and block responsible AI creation

Robert A. Freitas 22 Jr., JD from the University of Santa Clara (Santa Clara, CA), School of Law, Research Fellow at the Institute for Molecular Manufacturing, Won the 2009 Feynman Prize in Nanotechnology for Theory, BS in Physics and Psychology from Harvey Mudd College, “Molecular Manufacturing: Too Dangerous to Allow?”, Nanotechnology Perceptions, Volume 2, Number 1, Republished at The Lifeboat Foundation, <https://lifeboat.com/ex/molecular.manufacturing>

\*edited for language\*

Attempts to block or “relinquish” [3, 12] molecular manufacturing research will make the world a more, not less, dangerous place [13]. This paradoxical conclusion is founded on two premises. First, attempts to block the research will fail. Second, such attempts will preferentially block or slow the development of defensive measures by responsible groups. One of the clear conclusions reached by Freitas [4] was that effective countermeasures against self-replicating systems should be feasible, but will require significant effort to develop and deploy. (Nanotechnology critic Bill Joy, responding to this author, complained in late 2000 that any nanoshield defense to protect against global ecophagy “appears to be so outlandishly dangerous that I can’t imagine we would attempt to deploy it.” [12]) But blocking the development of defensive systems would simply insure that offensive systems, once deployed, would achieve their intended objective in the absence of effective countermeasures. James Hughes [13] concurs: “The only safe and feasible approach to the dangers of emerging technology is to build the social and scientific infrastructure to monitor, regulate and respond to their threats.”

We can reasonably conclude that blocking the development of defensive systems would be an extraordinarily bad idea. Actively encouraging rapid development of defensive systems by responsible groups while simultaneously slowing or ~~hindering~~ development and deployment by less responsible groups (“nations of concern”) would seem to be a more attractive strategy, and is supported by the Foresight Guidelines [10]. As even nanotechnology critic Bill Joy [14] finally admitted in late 2003: “These technologies won’t stop themselves, so we need to do whatever we can to give the good guys a head start.”

While a 100% effective ban against development might theoretically be effective at avoiding the potential adverse consequences, blocking all groups for all time does not appear to be a feasible goal. The attempt would strip us of defenses against attack, increasing rather than decreasing the risks. In addition, blocking development would insure that the substantial economic, environmental, and medical benefits [15] of this new technology would not be available.

Observes Glenn Reynolds [16]:

To the extent that such efforts [to ban all development] succeed, the cure may be worse than the disease. In 1875, Great Britain, then the world’s sole superpower, was sufficiently concerned about the dangers of the new technology of high explosives that it passed an act barring all private experimentation in explosives and rocketry. The result was that German missiles bombarded London rather than the other way around. Similarly, efforts to control nanotechnology, biotechnology or artificial intelligence are more likely to drive research underground (often under covert government sponsorship, regardless of international agreement) than they are to prevent research entirely. The research would be conducted by unaccountable scientists, often in rogue regimes, and often under inadequate safety precautions. Meanwhile, legitimate research that might cure disease or solve important environmental problems would suffer.

### 2NC – Uniqueness [China]

#### China’s surpassing the US in AI implementation and weaponry – supercharged tech industry and access to data

Bourne 22 (Jacob Bourne, analyst on the Connectivity & Tech Briefings team at Inside Intelligence, formerly covering Engineering; "Collaborations falter as US, China compete for AI dominance", 5-31-2022, Insider Intelligence, https://www.insiderintelligence.com/content/collaborations-falter-us-china-compete-ai-dominance, DOA: 7-18-2022)//ATJ

Why it’s worth watching: Despite the US’s early dominance and continued academic research lead in AI, China’s ultra-competitive tech industry and greater access to big data to train AI systems is positioning it as a global leader for AI implementation.

AI is a pivotal technology across industries, including defense, prompting Russian President Vladimir Putin to say in 2017 that AI is “the future, not only for Russia, but for all humankind. … Whoever becomes the leader in this sphere will become the ruler of the world.”

Russia previously received AI tech support from China for robotic weapons development, but war sanctions are dealing a blow to Russia’s AI aspirations. China is similarly working on AI-fueled autonomous weapons, possibly surpassing US progress in that arena.

#### China’s incredibly close to US AI capability now – massive increases in spending and civil-military fusion have propelled it forwards

Shkurti 19 (Gloria Shkurti, SETA Foundation; "Artificial Intelligence Application in the Military: The Case of United States and China", June 2019, ResearchGate, https://www.researchgate.net/publication/340503792\_Artificial\_Intelligence\_Application\_in\_the\_Military\_The\_Case\_of\_United\_States\_and\_China, DOA: 7-18-2022)//ATJ

CHINA AND ARTIFICIAL INTELLIGENCE

China is following in the steps of the U.S. when it comes to the research and application of AI technology. Not only is it using AI in domestic surveillance, but China has already stated that it aims to overtake the West in AI R&D by 2025 and more importantly to be the world leader in AI by 2030.64 The Chinese leadership, including here Xi Jinping, on many occasions has clearly stated that the leadership in AI technology is “critical to the future of global military and economic power competition.”65 It can be said that for China, the military AI R&D is seen as a possible and easy way to challenge the American military hegemony.

The Chinese government has increased their AI R&D spending by 350% between 2005 and 2015 and it is considered to be very close to the U.S. currently. Furthermore, in 2017, 48% of the world’s total AI start-up funding was cov-ered by Chinese companies and between 2013 and 2018 China’s AI industry attracted 60% of global funding for AI.66 As a result, it is believed among the Chinese leadership and industry that the gap between China and the U.S. in AI is very narrow now and China sees “AI as ‘a race of two giants,’ between itself and the United States.”67

While there may be a lot of skepticism re-garding China’s challenge to the American hege-mony, it can be said that the systemic and strategic advantages can act in favor of China and help it achieve its goal of be4coming a world leader in AI. This would include the potential human talent re-sources and the large amount of data that China possesses but most importantly the relation of the government and AI private sector.68 In this context, in contrast to the U.S., one of China’s strongest strategies is the civil–military integration69 (CMI) and the development of advanced dual-use tech-ologies.70 These complementary strategies are re-lated to the fact that the Chinese government and AI private sector are working closely together and this makes the application of AI technologies to the military easier. The main goal behind such a policy is to create a strong military and help the People’s Liberation Army (PLA) to dominate the warfare domains and as a result ‘leapfrog’ the U.S.71

### 2NC – Generic Link

#### Constraint of AI cedes the race to [Russia/China]

#### 1 ― PACING ― \*warrant out from cards\*

#### AI regulation overshoots, destroying productive applications necessary to prevent existential catastrophes

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Although scientists have calculated the significant positive welfare effects of Artificial Intelligence (AI), fear mongering continues to hinder AI development. If regulations in this sector stifle our active imagination, we risk wasting the true potential of AIs dynamic efficiencies. Not only would Schumpeter dislike us for spoiling creative destruction, but the AI thinkers of the future would also rightfully see our efforts as the ‘dark age’ of human advancement. This article provides a brief philosophical introduction to artificial intelligence; categorizes artificial intelligence to shed light on what we have and know now and what we might expect from the prospective developments; reflects thoughts of worldwide famous thinkers to broaden our horizons; provides information on the attempts to regulate artificial intelligence from a legal perspective; and discusses how the legal approach needs to be to ensure the balance between artificial intelligence development and human control over them, and to ensure friendly artificial intelligence.

Our technology, our machines, is part of our humanity. We created them to extend ourselves, and that is what is unique about human beings. – Ray Kurzweil1

1. Introduction

The Chinese cardboard game “Go” is one of the most complex strategy games humankind invented. Go was considered so important, there are myths indicating that ancient kings played Go between their armies in the battlefield to resolve the conflict in peace. Computers prevailed against humanities best in many zero-sum, perfect-information, partisan, deterministic strategy games2 before, with the exception of Go, which was something to be proud of.

The strategy aspect of Go is very complex and emphasizes the importance of balance on multiple levels and has internal tensions. A game of Go cannot be won by using brute force: calculating every possible move, similar to what IBM®’s then state of the art AI, Deep Blue® used to win over Gary Kasparov. To manoeuvre through the countless possible moves on the Go board and chose the most efficient path, one requires capabilities beyond the conventional computing powers; capabilities only our minds have (or so we thought), such as extremely accurate image and pattern recognition and insight, all of which we thought granted us superiority over the artificial minds we created.

In October 2015, a software called “AlphaGo®” became the first computer to beat a professional human Go player in an un-handicapped game of Go (Silver and Hassabis, 2016). AlphaGo’s victory is probably one of the most significant demonstrations of the capabilities of an AI. Firstly, it shows that AIs are beginning to surpass us at things where success is dependent on strategy as well as calculation. Things we classify as a “game”, from stock exchange to conflicts, from contract negotiations to hostage situations. Second, AlphaGo developed strategies on its own, through playing millions of games against itself. These feats sent the chills down the spines of those who fear that AIs will overpower us in the future.

We humans accelerate the future with our minds. This is a strength and a weakness. Often, our predictions of the future are highly inaccurate. Based on predictions from a book called ‘The World in 2010’, published in 1976, we should have been living above and below the surfaces of three planets as of five years ago. Predictions regarding the future of AI are equally likely to be off base.

To avoid premature regulation over AI, we should be studying and searching for the meaningful point in time when a broader anxiety about AI becomes a genuine concern. The study of a point of ripeness, a ‘threshold ability test,’ asks when AI could really bring about concrete disadvantages that might counter-balance the demonstrated contribution to economic efficiency and welfare.

In the absence of such an objective benchmark marking the point in time when AI becomes a competitor with the human mind, regulators could easily jump the gun in regulating AI, which would lead to irreparable harm in total welfare of human societies.

Most of what we consider AI today is really our own intelligence re-formatted and re-cycled, with the help of computers lacking any skill of learning or consciousness of being. Regulation at this stage would be perverse. The economic efficiency potentials of AI should be set entirely free at this point in time, allowing us to actively and aggressively research appropriate goals for them which would not result in the extinction of humankind.

If you think our future robot overlords will one day thank us for ignoring the risks and under regulating, think again. On the one hand, any issues we may face from AIs will likely result from humanity failure to effectively direct AIs to our needs, not because we switched to a defensive AI regulation regime too early. On the other hand, at some point of time in the not too distant future, natural, human-related or external factors may threaten the fate of the Earth, and we may need AI to save the planet and us. One hopes that society has not pulled the hand brakes on the wheels of AI too early, fearing our own active imagination.

#### 2 ― DEVELOPER PUSHOUT ― regulation drops developer interest to outside western SOI

Dr. Nell Watson 21, **PhD** in Engineering from the University of Gloucestershire, Degree in AGI Safety Fundamentals from the University of Cambridge, Senior Scientific Advisor to The Future Society at Harvard University, Fellow at the British Computing Society and Royal Statistical Society, “Regulatory Challenges to Catastrophic AI Risk”, ExO Insight, 11/24/2021, https://insight.openexo.com/regulatory-challenges-to-ai/

Rick Increase Factors:

Obfuscation: Regulations may drive research underground where it is harder to monitor, or to ‘flag of convenience’ jurisdictions with lax restrictions, by embedding dangerous technologies within apparently benign cover operations (multipurpose technologies), or by obfuscating the externalized effects of a system, such as in the vehicle emissions scandal (Wikipedia).

Arms race: Recent advances in machine learning such as multimodal abstractions models (aka Transformers, Large Language Models, Foundation Models) such as GPT-3 and DALL-E illustrate that dumping computing resources (and the funds for them) in colossal models seems to be a worthy investment. So far, there is no apparent limit or diminishing return on model size, and so now state and non-state actors are scrambling to produce the largest models feasible in order to access thousands of new capabilities never before possible. An arms race is afoot. Such arms races can lead to rapid and unexpected take-off in terms of AI capability, and the rush can blindside people to risks, especially when the loss of a race can mean an existential threat to a nation or organization.

Perverse incentives: Incentives can be powerful forces within organizations, and financialization, moral panic, or fear of political danger may cause irrational or incorrigible behavior of personnel within organizations.

Postmodern Warfare: Inexpensive Drones and other AI-enabled technologies have tremendous disruptive promise within the realm of warfare, especially given their asynchronous nature. Control of drone swarms must be performed using AI technologies, and this may encourage the entire theatre of war to be increasingly delegating to AI, perhaps including the interpretation of rules of engagement and grand strategy. (Lsusr, 2021)

Cyber Warfare: Hacking of systems is increasingly being augmented with machine intelligence (Cisomag, 2021), through GAN-enabled password crackers (Griffin, 2019) and advanced social engineering tools (Newman, 2021). This is equally the case in the realm of defense, where only machine intelligence may provide the swift execution required to defend systems from attack. A lack of international cyberwar regulations, and poor international policing of organized cybercrimes, may increase the risk of catastrophic risks to societal systems.

Zersetzung: The human mind is becoming a new theatre of war, through personalized generative propaganda, which may even extend to gaslighting attacks on targeted individuals, significantly leading to destabilization of societies (Williams, 2021). Such technologies are also plausibly deniable, being difficult to prove who may be responsible.

Inflexibility: The German Military after WW1 was not allowed to develop their artillery materiel, and so developed powerful rocket technologies instead, as these were not subject to regulation. Similarly, inflexible rules may permit exploitable loopholes. They may also not be sufficiently adaptive to allow for the implementation of new technologies and even improved industry standards.

Limitation of problem spaces: – It may be taboo to allow machine intelligence to work on sensitive issues or to be exposed to controversial (if potentially accurate) datasets. This may limit the ability of AI to make sense of out complex issues, and thereby frustrate finding solutions for crises.

#### 3 ― R&D ― Regs block innovative start-ups AND make advanced neural nets infeasible

Daniel Castro 19, Vice President at the Information Technology and Innovation Foundation (ITIF) and Director of ITIF's Center for Data Innovation, M.S. in Information Security Technology and Management from Carnegie Mellon University, B.S. in Foreign Service from Georgetown University, and Michael McLaughlin, “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence”, Information Technology & Innovation Foundation, 2/4/2019, https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence

HOW POLICIES BASED ON THE PRECAUTIONARY PRINCIPLE IMPACT AI

Policies based on the precautionary principle can impact AI in several ways. They can make it more expensive to develop AI, limit the testing and use of AI, and even ban certain applications. Clearly nations have the right to impose any regulations they chose (assuming they do not violate World Trade Organization rules or other global treaty obligations). But they should not delude themselves into believing that regulatory regimes based on the precautionary principle will not limit increased productivity, competitiveness, and innovation.

To provide a more detailed discussion of the negative effects policies based on the precautionary principle can have on AI, the following section analyzes the effects of policies discussed earlier in this report. In many cases, these policies have multiple negative effects on AI.

1. Slower and More Expensive AI Development

Policies based on the precautionary principle both slow and make the development of AI more expensive. For example, if all fifty U.S. states had laws such as New York’s, which requires autonomous vehicle firms to perform road testing under the paid supervision of police, testing such vehicles would be more expensive. Moreover, proposals to require even non-medical algorithms to undergo pre-market trials would hurt the development of AI because such trials are time-consuming and expensive. Such proposals may also make AI systems that use machine learning, and thus may change frequently and need more testing, significantly less viable because such systems could constantly need to go through a new approval process.96 Finally, policies that increase the cost of developing AI would likely discourage innovation in AI by creating a substantial barrier to entry for startups that lack sufficient funding to cover the cost of proving their AI system is safe. For example, the GDPR has dampened investment in European technology startups and led to a 30 percent decrease in the market share of small online advertising firms that lack the resources to easily comply with the regulation.97

Restrictions on one AI technology can also limit ways to develop another AI technology. For example, researchers in Germany are using drones hovering hundreds of meters above highways to record the movements of vehicles. This data can help develop simulations to test autonomous vehicles; such simulations are important tools for improving the safety of autonomous vehicles because otherwise they would need to travel billions of miles for safety validation.98 While this novel method of collecting data to validate the safety of autonomous vehicles may or may not prove valuable, implementing it in the United States would be would be difficult to do at scale until the FAA implements its new rules that allow out-of-sight drone flights and flights over people.99

2. Less Innovation

AI will spur innovation so policies that limit the development of AI will limit innovation.100 For example, proposals to ban or limit the introduction of autonomous vehicles would also limit the generation of new businesses, business models, and ways to do deliver services through the “passenger economy.” The passenger economy, a term coined by Intel and research firm Strategy Analytics, “is the economic and societal value that will be generated by fully autonomous…pilotless vehicles.”101 The firms envision a world where a significant portion of vehicle ownership is replaced by fleets of autonomous vehicles that provide on-demand transportation. Productivity would also increase as autonomous vehicles free employees to work during their commutes and autonomous trucks to operate more efficiently. The firms estimate the value of this economy could be $7 trillion by 2050.102 Nations that ban autonomous vehicles will not experience the benefits of such an economy.

3. Lower-Quality AI

There is often a negative correlation between making an AI system more explainable and its accuracy.103 As a result, any policies that require AI to be explainable could lead to less accurate AI. For example, researchers at Mount Sinai Hospital in New York developed an AI system called Deep Patient that can predict whether a patient is contracting any of a wide variety of diseases.104 The researchers trained Deep Patient on the health data from 700,000 patients, using hundreds of variables, such as test results, which allow it to predict diseases such as schizophrenia—which doctors struggle to predict—extremely well.105 Even though its operators can verify its accuracy by measuring outcomes, such as if a person is developing a disease, it is difficult for its own developers to know why it made a particular decision.106

Many sophisticated forms of AI pose a similar problem. Developing an AI system capable of explaining itself or justifying its decisions is an incredibly challenging technical feat, so much so that the U.S. Defense Advanced Research Projects Agency (DARPA) devoted $75 million in 2017 to research how AI could achieve it.107 Some groups are skeptical that requiring explainability would chill innovation. They cite DeepMind, a British company owned by Google parent-company Alphabet, developing an AI system in 2018 that can analyze eye scans to predict diseases while also providing doctors a map of the features of disease it sees, such as hemorrhages.108 However, the fact that one of the world’s leading AI companies could achieve a form of explainability in a system it worked on for nearly two years is not evidence that all other operators should or would be able to achieve explainability for their AI easily.109 To be clear, it is legitimate for companies, such as IBM, to create internal requirements for AI explainability.110 Requiring all firms to meet such a standard, however, would create a barrier to adopting AI, because not all AI systems are alike and not all businesses have a similar level of expertise.

Nonetheless, it is important for AI operators to continually assess their AI system’s accuracy to ensure it is generating or predicting the correct outcomes. The other option is to allow only AI applications that operators can explain; this would lead to AI systems that consider fewer variables and that use simpler algorithms to make decisions. In turn, this would reduce the effectiveness of AI that can generate significant impacts such as identifying a terminal illness before a doctor can.

#### Which nukes R&D at the small business and individual levels―they’re key

Dr. Jeremy Straub 21, **PhD**, Assistant Professor in the North Dakota State University Department of Computer Science and NDSU Challey Institute Faculty Fellow, “Would Regulation Prevent AI From Becoming an Evil Overlord?”, Dakota Digital Review, 10/1/2021, https://dda.ndus.edu/ddreview/would-regulation-prevent-ai-from-becoming-an-evil-overlord/

WHO DOES REGULATION REALLY PROTECT?

Achieving most of these benefits will require a lot more research and development. Regulations that make it more expensive to develop AIs or prevent certain uses might delay or forestall those efforts. This is particularly true for small businesses and individuals—key drivers of new technologies—who are not as well equipped to deal with regulation compliance as larger companies.

In fact, the biggest beneficiary of AI regulation may be large companies that are used to dealing with it, because startups will have a harder time competing in a regulated environment. Even ambiguity regarding regulation and what aspects of AI are regulated may be problematic, as it may cause people to avoid innovation to avoid risking inadvertent ensnarement by vague regulations and potential penalties.

Humanity faced a similar set of issues in the early days of the internet. But the United States actively avoided regulating the internet to avoid stunting its early growth.[39] Elon Musk’s PayPal and numerous other businesses helped build the modern online world while subject only to regular human-scale rules, like those preventing theft and fraud. Similarly, no special rules were rolled out to govern early software businesses, such as Microsoft, in their burgeoning years, that have gone on to become industry titans.

## Affirmative

### 2AC – No Russia AI Lead

#### Non-unique and we’ll pre-empt their uniqueness warrants – the invasion haulted Russia’s AI developments – even if they win that AI is being implemented and developed now – the war severely changed the trajectory of it

* Agrees that Russia was ahead on Ethical AI and AI implementation in 2021 and they planned to continue this onto 2022, but the invasion stopped that progress that they were making that would’ve put them ahead in the first place

Bendett, 22

[Samuel, Adjunct Senior Fellow at the Center for a New American Security and an Adviser at the CNA Corporation, April 15, 2022, “Russia’s Artificial Intelligence Boom May Not Survive the War”, Defense One, <https://www.defenseone.com/ideas/2022/04/russias-artificial-intelligence-boom-may-not-survive-war/365743/>, accessed 7-18-2022, BB]

But talk of AI has been muted since the Russian invasion of Ukraine. Apart from the widespread use of UAVs for reconnaissance and target acquisition and a single display of a mine-clearing robot—all of which are remote-controlled—there is no overt evidence of Russian AI in C4ISR or decision-making among the Russian military forces, other than a single public deepfake attempt to discredit the Ukrainian government. That does not mean AI isn’t used, considering how Ukrainians are now utilizing artificial intelligence in data analysis—but there is a notable absence of larger discussion about this technology in open-source Russian media.

The gap between Russian military aspirations for high-tech warfare of the future and the actual conduct of war today is becoming clear. In January 2021, Colonel-General Vladimir Zarudnitsky, the head of the Military Academy of the Russian Armed Forces General Staff, wrote that the development and use of unmanned and autonomous military systems, the “robotization” of all spheres of armed conflict, and the development of AI for robotics will have the greatest medium-term effect on the Russian armed forces’ ability to meet their future challenges. Other MOD military experts also debated the impact of these emerging technologies on the Russian military and future balance of forces. Russia continued to upgrade and replace Soviet-made systems, part of the MOD’s drive from “digitization” (weapons with modern information technologies for C4ISR) to “intellectualization” (widespread implementation of AI capable of performing human-like creative thinking functions). These and other developments were covered in detail during Russia’s “Army-2021” conference, with AI as a key element in C4ISR at the tactical and strategic levels.

Meanwhile, Russian military developers and researchers worked on multiple AI-enabled robotics projects, including the “Marker” concept unmanned ground vehicle and its autonomous operation in groups and with UAVs.

Toward the end of 2021, the state agency responsible for exporting Russian military technology even announced plans to offer unmanned aviation, robotics, and high-tech products with artificial intelligence elements to potential customers this year. The agency emphasized the equipment is geared toward defensive, border protection, and counter-terrorism capabilities.

Since the invasion, things have changed. Russia’s defense-industrial complex—especially military high-tech and AI research and development—may be affected by the international sanctions and cascading effects of Russia being cut off from semi-conductor and microprocessor imports.

Throughout 2021, the Russian government was pushing for the adoption of its AI civilian initiatives across the country, such as nationwide hackathons aimed at different age groups with the aim of making artificial intelligence familiar at home, work, and school. The government also pushed for the digital transformation of science and higher education, emphasizing the development of AI, big data, and the internet of things.

Russian academic AI R&D efforts drove predictive analytics; development of chat bots that process text and voice messages and resolve user issues without human intervention; and technologies for working with biometric data. Russia’s development of facial recognition technology continued apace, with key efforts implemented across Moscow and other large cities. AI as a key image recognition and data analytical tool was used in many medical projects and efforts dealing with large data sets.

Russian government officials noted their country’s efforts in promoting the ethics of artificial intelligence, and expressed confidence in Russia’s continued participation in this UN-sponsored work. The Russian Council for the Development of the Digital Economy has officially called for a ban on artificial intelligence algorithms that discriminate against people.

Russia’s Ministry of Economic Development was asked to "create a mechanism for assessing the humanitarian impact of the consequences of the introduction of such [AI] technologies, including in the provision of state and municipal services to citizens," and to prepare a "road map" for effective regulation, use, and implementation. According to the council, citizens should be able to appeal AI decisions digitally, and such a complaint should only be considered by a human. The council also proposed developing legal mechanisms to compensate for damage caused as a result of AI use.

In October, Russia’s leading information and communications companies adopted the National Code of Ethics in the Field of AI; the code was recommended for all participants in the AI market, including government, business, Russian and foreign developers. Among the basic principles in the code are a human-centered approach to the development of this technology and the safety of working with data.

AI workforce development was spelled out as a key requirement when the government officially unveiled the national AI roadmap in 2019. A 2021 government poll that tried to gauge the level of confidence in the government’s AI efforts showed that only about 64 percent of domestic AI specialists were satisfied with the working conditions in Russia.

The survey reflected the microcosm of AI research, development, testing, and evaluation in Russia—lots of government activity and different efforts that did not automatically translate into a productive ecosystem conducive for developing AI, some major efforts notwithstanding.

Among some of the reasons in 2021 that Russia was lagging behind in the development of artificial intelligence technologies were the personnel shortage and the weakness of the venture capital market. The civilian developer community also noted the low penetration of Russian products into foreign markets, dependence on imports, slow introduction of products into business and government bodies, and a weak connection between AI theory and practice.

Russia’s likely plans to concentrate on these areas in 2022 were revised or put on hold once Russia invaded Ukraine. The sudden pull-out of major IT and high-tech companies from Russia, coupled with a rapid brain drain of Russia’s IT workers, and the ever-expanding high-tech sanctions against the Russian state may hobble domestic AI research and development for years to come. While the Russian government is trying to prop up its AI and high-tech industry with subsidies, funding, and legislative support, the impact of the above-mentioned consequences may be too much for the still-growing and evolving Russian AI ecosystem. That does not mean AI research and development will stop—on the contrary, many 2021 trends, efforts, and inventions are being implemented into the Russian economy and society in 2022, and there are domestic high-tech companies and public-private partnerships which are trying to fill the void left by the departed global IT majors. But the effects of the invasion will be felt in the AI ecosystem for a long time, especially with so many IT workers leaving the country, either because of the massive impact on the high-tech economy, or because they disagree with the war, or both.

One of the most-felt sanctions aftereffects has been the severing of international cooperation on AI among Russian universities and research instructions, which earlier was enshrined as one of the most important drivers for domestic AI R&D, and reinforced by support from the Kremlin. For most high-tech institutions around the world, the impact of civilian destruction across Ukraine by the Russian military greatly outweighs the need to engage Russia on AI. At the same time, much of the Russian military AI R&D took place in a siloed environment—in many cases behind a classified firewall and without significant public-private cooperation—so it’s hard to estimate just how sanctions will affect Russian military AI efforts.

While many in Russia now look to China as a substitute for departed global commercial relationships and products, it’s not clear if Beijing could fully replace the software and hardware products and services that left Russian markets at this point.

Recent events may not stop Russian civilians and military experts from discussing how AI influences the conduct of war and peace—but the practical implementation of these deliberations may become increasingly more difficult for a country under global high-tech isolation.

### 2AC – No China AI Lead

#### China doesn’t lead in AI ­– reports use false metrics (i.e., patents, research publications) – insert this graph

Ghi et al. 21 (Trung Ghi; Abhishek Srivastava; Arthur D. Little; "The Global AI Arms Race – How Nations can Avoid being Left Behind", January 2021, PRISM, https://www.adlittle.com/sites/default/files/prism/Global%20AI%20article.pdf, DOA: 7-18-2022)//ATJ

There are several country rankings of AI strength across the world. Those that focus on metrics such as patents and research publications tend to list China first, followed by the US, with third place disputed between European and Asian countries including South Korea, Japan and India.

However, taking a broader approach using a composite AI-readiness index (from Oxford Insights) that factors in governance, skills and education, infrastructure and data, and government/public services reveals the top three countries to be Singapore, the UK and Germany. (See Figure 1.)

Chart

Description automatically generated

#### Still pertinent today – the US leads by a wide margin above China – insert this chart

O.I. 22 (Oxford Insights; "Government AI Readiness Index 2021", January 2022, Oxford Insights, https://static1.squarespace.com/static/58b2e92c1e5b6c828058484e/t/61ead0752e7529590e98d35f/1642778757117/Government\_AI\_Readiness\_21.pdf, DOA: 7-18-2022)//ATJ

Table

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Figure : the US firmly leads the AI index, with China coming in at 15th.

#### Not unique — China is not overtaking the US.

Cooper and Kompella 22 — James Cooper, professor of law and director of International Legal Studies at California Western School of Law, research fellow at Singapore University of Social Sciences, J.D. from the University of Toronto (Canada), LL.M. from the University of Cambridge (U.K), and Kashyap Kompella, technology industry analyst and CEO of RPA2AI, a global artificial intelligence advisory firm, Masters in Business Laws from National Law School of India University (India), 2022 (“No, China is not winning the AI race,” *The Hill*, February 3rd, Available Online at <https://thehill.com/opinion/technology/592270-no-china-is-not-winning-the-ai-race/>, Accessed 07-19-2022)

The global competition between the United States and China continues apace. Technology is rightly seen as providing unique leverage to win this geopolitical race. The U.S. long has been the global technology powerhouse, but not surprisingly, we have heard much about the Chinese government’s ambition to dominate high-tech industries such as 5G telecommunications, autonomous vehicles, blockchain, and semiconductor chips.

In this light, as a horizontal technology that can be applied across all sectors, artificial intelligence (AI) has become a strategic priority and the Chinese focus on superiority in this field is touted as something about which the U.S. should be concerned. Some have gone so far as to conclude that the West has already lost the AI race.

Don’t believe the hype. To be sure, the availability of large amounts of data is at the heart of AI success. It is tempting to think that less-democratic regimes that amass huge amounts of data about their citizens and have scant regard for privacy can develop better AI systems using that data. However, all other things being equal, better and higher quality AI systems emerge from countries with strong data privacy and data protection regulations because AI systems must undergo greater scrutiny during their development and deployment. An example of this can be seen in the United States regarding fair lending practices and consumer protection from credit bureaus. Further, the market for AI is global, and such high-quality AI systems find buyers in other countries as well.

Around the globe, Big Tech’s rising power has resulted in calls for more oversight. In a drastic move that stunned the industry and analysts alike, the Chinese government recently rewrote the rulebook for the country’s technology industry. In effect, China is vacating entire swaths of digital and creative industries, arenas that serve as training grounds and talent factories for other industries. This more restrictive approach may not bode well for China’s AI industry in the long term. China may find itself constrained on the extent of automation and AI in its manufacturing sector — labor-intensive manufacturing remains China’s main strength, and a high degree of automation can result in job losses, labor unrest, and instability.

Meanwhile, there is bipartisan support for AI in the United States. Former President Trump proposed increasing funding for AI development through the National Science Foundation. The National AI Initiative Act of 2020 signaled a sense of urgency and suggested that several federal agencies create a national strategy on artificial intelligence. The Biden administration has formed the Artificial Intelligence Research Resource Task Force to develop a roadmap to foment AI research and spark innovation nationwide. There is draft legislation, at both the state and federal level, to promote responsible use of AI and prevent its misuse.

Strong objections to the use of facial recognition and other AI systems by law enforcement in the U.S., raised by civil liberties advocates, have led some local authorities, such as the City of San Francisco, to ban such systems. To use a Silicon Valley phrase, these debates are “not a bug, but a feature.” They shine a light on the limitations of AI systems and help to set the “rules of the road” for proper use of AI. This will establish the U.S. as a global leader in AI regulation, once lawmakers and regulators do their work. China, meanwhile, has faced strong global criticism for using facial recognition software to monitor and surveil Uyghurs in its Xinjiang region. China has outlined a set of AI ethics principles, but the jury is still out on enforcement and how they function in practice.

The increasing number of AI research papers and patents by Chinese researchers is often cited as proof that China has caught up with the United States in this field. The increased focus is good for the Chinese AI ecosystem, and it will help them solve China-specific problems. But dominance in this emerging strategic industry is not guaranteed. The U.S. has several strategic advantages, including: the strengths of its higher education and research institutes, which attract the best STEM talent from across the world; the largest venture capital ecosystem; and the largest number of technology unicorns (start-ups with private valuations greater than $1 billion).

China is not overtaking the U.S. in artificial intelligence. The current evidence and trajectory paint a clear picture: The conditions for AI to flourish, such as incentives to experiment, freedom to pursue opportunities without restrictions, and the coming guardrails to prevent misuse, favor U.S. leadership. This is still the United States’s game to lose — though maybe both countries could win through collaboration. To solve planet-scale problems such as climate change, we are going to need AI solutions from both competitors.

#### The US leads China in defense AI — increased spending.

Greene 21 — Tristan Greene, editor and technology reporter at TNW, 2021 (“Here’s why the US continues to beat China in the AI race,” *TNW*, June 2nd, Available Online at <https://thenextweb.com/news/heres-why-the-us-continues-to-beat-china-in-the-ai-race>, Accessed 07-18-2022)

The global AI race was supposed to be a sprint. Back in 2017 when driverless cars and domestic robots were thought to be just around the corner, the promise of deep learning made it seem like we were mere months away from living in an AI-powered utopia.

As it turns out, the global AI race is more of a marathon. And the US has a huge lead that’ll be difficult to overcome for any country, but especially China.

The setup

It was easy to believe China would pull ahead a few years ago. US big tech companies such as Microsoft and Apple had always co-existed with eastern outfits. But, once deep learning exploded in 2014, many experts believed China would use its government influence to direct the flow of research in ways the EU and US’ respective leaders simply couldn’t.

And, for a while, it looked like that was going to be enough to propel the PRC to the top of the global AI leaderboards.

In the west, a lion’s share of AI research ends up patented by businesses who keep their algorithms in a walled-garden. But in the east things are different.

Per an article in the Harvard Business Review:

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.

China’s big problem

The biggest problem China has when it comes to AI is a lack of innovation. Consumer demand is at an all-time high for deep learning technologies in China, but this social trend isn’t translating into breakthroughs.

In essence, China is still playing catch up. The Chinese government may be pouring more money into research and producing more of it, but US tech companies are raising and spending more on research outside of academia.

The US government still spends more on defense AI than China, and US businesses spend more money on cutting-edge research than Chinese companies do.

Simply put, the biggest technology companies in the US can afford to invest in breakthrough research even when such research leads nowhere. The profit margins are much leaner at most Chinese firms so the incentive is typically on producing a profit.

Unfortunately for China, much of its AI position is rooted in developing Chinese-language versions of language recognition software and creating surveillance technology – neither of those are very marketable outside of places where Chinese is spoken or where privacy laws exist.

What it all means

Deep learning might not be the best path forward for artificial intelligence technologies. This is great news for big tech companies in the US. But it’s bad news for China.

In the US, where most of the AI breakthroughs tend to come from big tech companies with large enough coffers to afford supercomputers and high enough salaries to lure away academia’s brightest, scientists won’t miss a beat if we transition away from deep learning

But China’s heavily-saturated market likely won’t extend beyond its own bubble, much less the deep learning bubble that could pop and leave AI-only companies behind. There’s a reason why there’s only one Chinese firm among the top five richest technology companies in the world.

It’ll be tough for academia in China to keep up with big tech in the US no matter how much data it can generate or acquire.

We’re more likely to see these kinds of catch-up cycles end in cooling-off cycles when heavy government investment doesn’t pay off. China could be headed for an AI winter.

### 2AC – Regulation good

#### AI arms race leads to a race to the bottom on AI safety, which undermines international stability

Scharre 21 (Paul Scharre, holds a **Ph.D.** in War Studies from King’s College London and an M.A. in Political Economy and Public Policy and a B.S. in Physics, cum laude, from Washington University in St. Louis, Vice President and Director of Studies at the Center for a New American Security, previously worked in the Office of the Secretary of Defense; "Debunking the AI Arms Race Theory", Texas National Security Review, vol. 4, iss. 3, summer 2021, 121-132, DOI: 10.26153/tsw/13985, DOA: 4-14-2022)//ATJ

Race to the Bottom on Safety A related risk of a “racing” dynamic among competitors could come from an acceleration, not of the pace of operations on the battlefield, but of the process of fielding new AI systems. AI systems today have a host of safety and security problems that can make them brittle, unreliable, and insecure.29 Because machine learning in particular can create new ways in which systems can fail, militaries face novel challenges in adopting AI systems.30 Militaries will have to adopt new methods to test, evaluate, verify, and validate AI systems (also known as TEVV).31 Such concerns related to autonomy are well known in the U.S. defense community,32 although at present they have not been solved to a satisfactory degree. Machine learning introduces additional challenges with regard to testing, evaluation, verification, and validation. A rush to field AI systems before they are fully tested could result in a “race to the bottom” on safety, with militaries fielding accident-prone AI systems. There are strong bureaucratic and institutional imperatives for militaries to field systems that are robust and secure. Indeed, designing systems to military specification standards often means making them more robust for a wider range of environmental conditions and shocks than comparable commercial systems, even at the expense of other aspects of performance, such as size, weight, or usability. AI presents novel challenges, however, in achieving the robustness needed for operating in the complex, hazardous, and adversarial environments that often characterize military operations. Certain AI methods today, such as deep learning, remain relatively immature with significant reliability challenges. A 2017 Department of Defense report by the JASON scientific advisory group explained that deep neural networks are immature as regards the “illities”, including reliability, maintainability, accountability, validation and verification, debug-ability, evolvability, fragility, attackability, and so forth. … Further, it is not clear that the existing AI paradigm is immediately amenable to any sort of software engineering validation and verification. This is a serious issue, and is a potential roadblock to DoD’s [Department of Defense’s] use of these modern AI systems, especially when considering the liability and accountability of using AI in lethal systems.33 The Defense Department’s 2018 AI strategy calls for building AI systems that are “resilient, robust, reliable, and secure.”34 Yet, the current state of technology makes achieving this goal particularly difficult for AI systems that incorporate deep learning, a subfield of AI that has seen significant growth and attention in recent years. While there is active research underway to improve AI safety and security, militaries will have to adapt to the technology as it currently is, at least for the time being. An ideal process would be for militaries to engage in experimentation, prototyping, and concept development, but also to subject AI systems to rigorous TEVV under realistic operational conditions before deployment. Taking shortcuts on testing and evaluation and fielding a system before it is fully tested could lead to accidents, which, in some settings, could undermine international stability. In evaluating new technologies, militaries may be relatively accepting of the risk of accidents, which may lead them to tolerate the deployment of systems that have reliability concerns. In building and fielding new capabilities, militaries have to weigh the possibility of an accident occurring against other concerns, such as forgoing valuable military capabilities. The military operational environment is fraught with risk, in both training and real-world operations. Military institutions balance managing this risk with other factors, such as the need for training, developing new capabilities, or accomplishing the mission. Military institutions view casualties from training accidents or testing new capabilities as a tragic but unavoidable part of the business of preparing for war. Militaries expect high performance from their forces, often while they are performing dangerous tasks, but militaries neither demand nor expect accident-free operations in most settings.35 From 2006 to 2020, over 5,000 U.S. servicemembers were killed in non-war related accidents, the majority of which occurred within the United States. Accidents overall accounted for nearly 32 percent of U.S. servicemember deaths during this period, and even accounted for a significant portion of servicemember deaths in Iraq (19 percent) and Afghanistan (16 percent).36 These accident rates are not unusual for the U.S. armed forces. This is business as usual. Accidents draw the attention of senior military and civilian officials when a spate of accidents occur in a short amount of time — such as a series of aircraft crashes,37 ship collisions,38 or training accidents.39 Yet, as one report on naval accidents from 1945 to 1988 notes, “peacetime naval accidents are a fact of life.”40 The same is true of military air and ground operations. Other nations’ militaries may do an even poorer job of managing risk when it comes to accidents than the U.S. military. For example, the Soviet/Russian submarine community has a much higher accident rate than the U.S. submarine community.41 New technologies in particular present an increased risk of accidents, yet militaries may press ahead out of a desire to develop and field what they perceive to be a valuable capability. For example, the V-22 Osprey tiltrotor aircraft suffered four crashes during development, killing 30 U.S. servicemembers in total, yet the Defense Department continued development.42 The V-22 program manager cited a rush to develop the technology as a factor in the accidents, stating, “Meeting a funding deadline was more important than making sure we’d done all the testing we could.”43 Taking shortcuts on testing in particular appears to have been a factor in at least one fatal crash. According to a Government Accountability Office investigation of the V-22 program, “schedule pressures” led the program to conduct only 33 of 103 planned tests of an aerodynamic phenomenon called a “vortex ring state,”44 a phenomenon that later caused an April 2000 crash that killed 19 servicemembers.45 Absent competitive dynamics, militaries may be able to manage the challenges of fielding safe AI systems to a more-or-less satisfactory degree, albeit with some risk of an accident occurring. However, out of a desire to field AI capabilities ahead of competitors, militaries may be more willing to accept risk than they might otherwise be and to field systems that are prone to mishaps.46 Similar competitive dynamics may have played a role in accidents with self-driving cars and commercial airline autopilot technology, as companies rushed to beat others to market.47 These dynamics, while not an arms race, could lead militaries to engage in a “race to the bottom” on safety. This risk could become particularly acute in wartime. Managing these risks is challenging because assessing them can be difficult, especially when it comes to new technologies. Accident rates may be well-known for mature technologies, but they are unknown for technologies still in development. In the case of the V-22 Osprey development, for example, it is not as though the Defense Department knew that developing it would lead to multiple crashes and 30 fatalities but decided that achieving the capability was worth the cost. Engineers, testers, and program managers are flying in the dark when it comes to new technologies — that is, after all, the point of testing new systems. The concern is not only that organizations may take measured risks to field new capabilities, but also that institutional and bureaucratic imperatives may lead organizations to distort their own perceptions of risk, further contributing to accidents. This sociological phenomenon has been cited as a cause in the 1986 Space Shuttle Challenger explosion, for example.48

#### Proactive AI regulations protect consumers and drive innovation – squo ex-post measures cede AI to industry, decimate public support for emerging tech, and crushes innovation – facial recognition proves

* businesses want proactive regs on AI because the public doesn’t trust the companies because of the lack of regs
* Empirics prove – credit bureaus
* Facial recognition is hated and the gov is thinking about banning it now only because the companies making it in the beginning had no regulatory framework to operate in
* Reed says ex-post regs coming now

MacCarthy 20 (Mark MacCarthy, holds a **PhD** in philosophy from Indiana University, MA in Economics from Notre Dame, and a BA from Fordham University, Senior Fellow in Governance Studies at the Center for Technology Innovation at Brookings, adjunct professor at Georgetown University; "AI needs more regulation, not less", 3-9-2020, Brookings, https://www.brookings.edu/research/ai-needs-more-regulation-not-less/, DOA: 4-19-2022)//ATJ

In the early 1970s, the fledgling credit card industry routinely and shortsightedly held cardholders liable for fraudulent transactions, even if their cards had been lost or stolen. In response, Congress passed the 1974 Fair Credit Billing Act to limit cardholder liability. This protection increased public trust in the new payment system and spurred growth and innovation. Because they could no longer just pass fraud losses on to cardholders, payment networks devised one of the first commercial applications of neural networks to detect out-of-pattern card usage and reduce their fraud losses.

Smart regulation, like the above example, that gets out in front of emerging technology can protect consumers and drive innovation. In the last several decades, however, policymakers have forgotten this beneficial side effect of regulation, preferring to give industry players free rein to deploy emerging technologies as they see fit.

The grim results of that laissez-faire philosophy are all around us today in the form of a still-growing backlash against tech companies. The public darkly suspects that these companies are interested primarily in promoting their own dominance and not dealing with deleterious ramifications. As a result, policymakers at the state and local levels are beginning to consider technology bans on AI applications such as facial recognition. The path forward is not deregulation or prohibitions, but smart, proactive regulation that establishes a framework for both public protection and innovation growth.

THE WHITE HOUSE AI GUIDANCE HAS GOOD AND BAD NEWS

The White House recently released guidance for the regulation of AI applications, establishing a framework that future rulemaking or legislation can build upon. The good news is that the administration is committed to a sectoral approach. Since AI is just a collection of statistical techniques that can be used throughout the economy, it makes no sense to have a federal AI commission to enforce one-size-fits-all rules. The White House report wisely encourages sectoral regulators to formulate rules for the AI applications within their jurisdiction. In a recent op-ed, former White House official R. David Edelman makes a similar point about not regulating AI as if it were a single thing.

Unfortunately, the report also perpetuates the out-of-date, hands-off approach. It encourages regulators to think of their activity as one which holds innovation back. Regulators are told that they must “avoid regulatory or non-regulatory actions that needlessly hamper AI innovation and growth.” Regulation is seen as a cost, a hindrance, a delay, or a barrier which must be reluctantly accepted as a last resort only if absolutely necessary.

The idea that measures such as transparency, accountability, and fairness might promote AI growth and innovation is foreign to this framework. But in today’s world, the real task for AI regulators is to create a rules structure that both protects the public and promotes industry innovation—not to trade off one against the other.

NEW LEGISLATION IS NEEDED

Many AI applications cry out for before-the-fact legislation, not just application of existing rules. When Illinois passed its Artificial Intelligence Video Interview Act last year, some commentators thought it was overreacting to science fiction speculations. But the law, which established requirements for notice, consent, and explanations when employers use AI to analyze videos of job applicants, is already behind the curve. A host of companies, such as HireVue, are already using AI video analysis to score job applicants.

Employment screening is riddled with insular, clubby judgments that perpetuate a uniform workplace rather than finding talented or creative types. Companies are right to look for fairer and more accurate algorithmic screening techniques.

Still, except for the new Illinois state law, AI hiring algorithms are devoid of consumer protections. Vendors provide neither validity tests to show that these techniques detect traits relevant to job performance, nor disparate impact assessments to reveal potential discriminatory effects. Employers can turn job applicants down on the basis of these screenings without ever having to explain the basis for these adverse actions.

Policymakers used to know what to do when faced with such a promising emerging technology: They would throw a regulatory net around it to provide for growth and consumer protection. When computerized credit bureaus began to spread in the late 1960s, Congress got ahead of the emerging technology and put in place the 1970 Fair Credit Reporting Act, which established consumer-protection rights and shielded the bureaus from defamation suits. The industry expanded rapidly, but consumers remained safe. Passing a national law now to regulate AI-driven employment tests might similarly provide win-win benefits to AI firms, employers, and job applicants.

THE BACKLASH AGAINST FACIAL RECOGNITION

The troublesome experience with facial recognition shows what can happen when companies rush AI applications to market without a regulatory safety net. Tests at the National Institute for Standards and Technology have demonstrated that the technology on the market now has discriminatory effects. Nevertheless, with almost no public scrutiny, local law enforcement agencies have been using the technology. The latest such story concerns widespread law enforcement access to Clearview’s trove of (illegally obtained!) photos in pursuit of lawbreakers—apparently oblivious of the civil liberties risks involved.

As a result of this rush to market, facial recognition technology is in trouble both here and abroad. Privacy and civil liberties groups have urged a suspension of federal government use of facial recognition systems, pending further review. Scholars have called for a ban, and some states and cities have already implemented partial bans.

A ban might be throwing out the baby with the bathwater. But, if the only alternative is after-the-fact regulation to correct whatever mistakes turn up, a ban or moratorium might make sense. In a welcome, if belated, development, key industry participants have come out in favor of a proactive regulatory framework.

PROACTIVE REGULATION IS NEEDED

Machine learning is the “most important general-purpose technology of our era.” The calls for modest regulation that lets industry take the lead are part of a failed regulatory philosophy, one that saw its natural experiment over the past several decades come up lacking. AI is too important and too promising to be governed in a hands-off fashion, waiting for problems to develop and then trying to fix them after the fact.

It is time to return to the way we used to regulate emerging technologies. Industry leaders like Google CEO Sundar Pichai have recently recognized the advantages of proactive, sector-by-sector regulation of AI applications. Thoughtful, far-sighted policymakers, like those in the 1970s who regulated and jump-started new payment systems and credit bureaus, need to set the rules and priorities for this vital technology in a way that protects consumers and provides for innovation and growth.

#### Absent the plan, companies have free reign in AI – that leads to demoware proliferation that produces useless applications of AI (i.e., deepfakes/image generation vs military/defense uses)

* It’s not a question of “who implements AI first” if American AI is bad

Marcus 22 (Gary Marcus, holds a **PhD** from MIT, founded Geometric Intelligence, a machine learning company purchased by Uber two years later in 2016; "Artificial General Intelligence Is Not as Imminent as You Might Think", 6-6-2022, Scientific American, https://www.scientificamerican.com/article/artificial-general-intelligence-is-not-as-imminent-as-you-might-think1/, DOA: 7-18-2022)//ATJ

To the average person, it must seem as if the field of artificial intelligence is making immense progress. According to the press releases, and some of the more gushing media accounts, OpenAI’s DALL-E 2 can seemingly create spectacular images from any text; another OpenAI system called GPT-3 can talk about just about anything; and a system called Gato that was released in May by DeepMind, a division of Alphabet, seemingly worked well on every task the company could throw at it. One of DeepMind’s high-level executives even went so far as to brag that in the quest for artificial general intelligence (AGI), AI that has the flexibility and resourcefulness of human intelligence, “The Game is Over!” And Elon Musk said recently that he would be surprised if we didn’t have artificial general intelligence by 2029.

Don’t be fooled. Machines may someday be as smart as people, and perhaps even smarter, but the game is far from over. There is still an immense amount of work to be done in making machines that truly can comprehend and reason about the world around them. What we really need right now is less posturing and more basic research.

To be sure, there are indeed some ways in which AI truly is making progress—synthetic images look more and more realistic, and speech recognition can often work in noisy environments—but we are still light-years away from general purpose, human-level AI that can understand the true meanings of articles and videos, or deal with unexpected obstacles and interruptions. We are still stuck on precisely the same challenges that academic scientists (including myself) having been pointing out for years: getting AI to be reliable and getting it to cope with unusual circumstances.

Take the recently celebrated Gato, an alleged jack of all trades, and how it captioned an image of a pitcher hurling a baseball. The system returned three different answers: “A baseball player pitching a ball on top of a baseball field,” “A man throwing a baseball at a pitcher on a baseball field” and “A baseball player at bat and a catcher in the dirt during a baseball game.” The first response is correct, but the other two answers include hallucinations of other players that aren’t seen in the image. The system has no idea what is actually in the picture as opposed to what is typical of roughly similar images. Any baseball fan would recognize that this was the pitcher who has just thrown the ball, and not the other way around—and although we expect that a catcher and a batter are nearby, they obviously do not appear in the image.

Likewise, DALL-E 2 couldn’t tell the difference between a red cube on top of a blue cube and a blue cube on top of a red cube. A newer version of the system, released in May, couldn’t tell the difference between an astronaut riding a horse and a horse riding an astronaut.

When systems like DALL-E make mistakes, the result is amusing, but other AI errors create serious problems. To take another example, a Tesla on autopilot recently drove directly towards a human worker carrying a stop sign in the middle of the road, only slowing down when the human driver intervened. The system could recognize humans on their own (as they appeared in the training data) and stop signs in their usual locations (again as they appeared in the trained images), but failed to slow down when confronted by the unusual combination of the two, which put the stop sign in a new and unusual position.

Unfortunately, the fact that these systems still fail to be reliable and struggle with novel circumstances is usually buried in the fine print. Gato worked well on all the tasks DeepMind reported, but rarely as well as other contemporary systems. GPT-3 often creates fluent prose but still struggles with basic arithmetic, and it has so little grip on reality it is prone to creating sentences like “Some experts believe that the act of eating a sock helps the brain to come out of its altered state as a result of meditation,” when no expert ever said any such thing. A cursory look at recent headlines wouldn’t tell you about any of these problems.

The subplot here is that the biggest teams of researchers in AI are no longer to be found in the academy, where peer review used to be coin of the realm, but in corporations. And corporations, unlike universities, have no incentive to play fair. Rather than submitting their splashy new papers to academic scrutiny, they have taken to publication by press release, seducing journalists and sidestepping the peer review process. We know only what the companies want us to know.

In the software industry, there’s a word for this kind of strategy: demoware, software designed to look good for a demo, but not necessarily good enough for the real world. Often, demoware becomes vaporware, announced for shock and awe in order to discourage competitors, but never released at all.

Chickens do tend to come home to roost though, eventually. Cold fusion may have sounded great, but you still can’t get it at the mall. The cost in AI is likely to be a winter of deflated expectations. Too many products, like driverless cars, automated radiologists and all-purpose digital agents, have been demoed, publicized—and never delivered. For now, the investment dollars keep coming in on promise (who wouldn’t like a self-driving car?), but if the core problems of reliability and coping with outliers are not resolved, investment will dry up. We will be left with powerful deepfakes, enormous networks that emit immense amounts of carbon, and solid advances in machine translation, speech recognition and object recognition, but too little else to show for all the premature hype.

Deep learning has advanced the ability of machines to recognize patterns in data, but it has three major flaws. The patterns that it learns are, ironically, superficial, not conceptual; the results it creates are difficult to interpret; and the results are difficult to use in the context of other processes, such as memory and reasoning. As Harvard computer scientist Les Valiant noted, “The central challenge [going forward] is to unify the formulation of … learning and reasoning.” You can’t deal with a person carrying a stop sign if you don’t really understand what a stop sign even is.

For now, we are trapped in a “local minimum” in which companies pursue benchmarks, rather than foundational ideas, eking out small improvements with the technologies they already have rather than pausing to ask more fundamental questions. Instead of pursuing flashy straight-to-the-media demos, we need more people asking basic questions about how to build systems that can learn and reason at the same time. Instead, current engineering practice is far ahead of scientific skills, working harder to use tools that aren’t fully understood than to develop new tools and a clearer theoretical ground. This is why basic research remains crucial.

#### AI regulation is key to development – developers only get on board if they can ensure that AI won’t become a threat

Stepken, 21

[Axel, chairman of the board of management, October 27, 2021, “AI regulation – why it will boost innovation”, LinkedIn, <https://www.linkedin.com/pulse/ai-regulation-why-boost-innovation-axel-stepken>, accessed 7-18-2022, BB]

Most people tend to flinch automatically at the mention of regulation. However, regulatory agreements and normative requirements are what enable us to benefit from today’s global trade networks. I firmly believe that an assured regulatory framework enhances, rather than impairs, innovation and economic opportunities.

When it comes to innovative technologies, regulation frequently lags behind market development. This is nothing new. Regulatory oversight, particularly for disruptive technologies such as AI applications, is expected to provide a reliable framework for both users and companies, while keeping efforts and expenses at a reasonable level. But at the same time, it is expected to support the dynamic development of these technologies and steer them safely towards the greater and common good.

Complex fields of regulation

The fundamental principles of good AI regulation include legal compliance, interoperability, IT security and data protection, but also the ethical principles of the European Union. Technology- and process-related requirements can be drawn up based on previous regulations and easily operationalised. A more difficult aspect in the case of AI applications involves ethical considerations and how to weigh them against technological aspects. In addition to the above, AI applications including their tasks and results may have enormous implications for the realities of people’s lives. This certainly does not make regulatory oversight any easier.

What is more important, the performance of an AI application, which I can improve by feeding it a significantly greater quantity of more detailed data, or protection of a patient’s personal data?

This is one of the questions that regularly comes up for AI applications in the medical field.

EU draft legislation: new dimension of risk assessment

In April 2021, the European Parliament took a first significant step in this direction by publishing the world’s first draft legislation for categorising AI systems in risk classes. The proposal for a regulation provides for four AI risk classes and is aimed at building an “ecosystem of trust” towards AI applications. A new and important aspect is that the proposal looks not only at the potential risks, but also at the options of individuals affected by AI decisions – in other words, how they can understand, doubt or even, if necessary, reverse these decisions. This is a completely new dimension of risk assessment and goes far beyond risk management as practised today.

Regulatory oversight welcome

These efforts cannot come too soon. International competition in the development and application of AI systems is progressing rapidly, with stakeholders asking more and more often which of the many possibilities of AI systems can be reconciled with European values. The need for information and regulation in this area is demonstrated by the increasing number of companies publishing codes of AI ethics, designed to provide guidance for the companies’ actions and inspire consumer trust. Various surveys among consumers and companies alike show a demand for regulatory oversight and certification of AI applications One examples are the surveys (in German) Unternehmer-Studie 2020 or Verbraucher-Studie 2021 conducted by TÜV-Verband among companies or consumers respectively.

Regulation brings benefits

While many of us associate the concept of regulatory oversight with negative connotations, it has tangible benefits when implemented in a moderate and practical manner.

“AI quality made in Germany” or “Made in the EU” enables companies and their AI systems to stand out from their market companions from other countries.

Regulation establishes transparency and trust, enabling faster market penetration and thus growth in sales revenue.

Conclusive regulation provides a framework for the development of AI systems which may act as a catalyst for high quality.

It will provide companies with a stable, secure and certain legal framework for their business operations.

Regulation creates transparency and trust

Regulated and verified AI applications create transparency and trust for consumers and companies alike, which in turn enable faster market penetration.

AI will only be able to unfold its full potential if people are reassured that AI applications will not disrupt our societal and economic principles. Given this, I am certain that clear and reliable regulatory oversight of AI applications with a healthy sense of perspective will generate competitive edge for Germany and Europe.

#### Regulated AI is key to hamper innovations and get developers on board

Maliha, 21

[George, MD, is a second-year internal medicine resident at the University of Pennsylvania Health System, 7-13-2021, “To Spur Growth in AI, We Need a New Approach to Legal Liability”, Harvard Business Review, <https://hbr.org/2021/07/to-spur-growth-in-ai-we-need-a-new-approach-to-legal-liability>, accessed 7-18-2022, BB]

Artificial intelligence (AI) is sweeping through industries ranging from cybersecurity to environmental protection — and the Covid-19 pandemic has only accelerated this trend. AI may improve the lives of millions, but it also will inevitably cause accidents that injure people or parties — indeed, it already has through incidents like autonomous vehicle crashes. An outdated liability system in the United States and other countries, however, is unable to manage these risks, which is a problem because those risks can impede AI innovations and adoption. Therefore, it is crucial that we reform the liability system. Doing so will help speed AI innovations and adoption.

Misallocated liability can hamper innovation in several ways. All else being equal, an AI designer looking to implement a system in one of two industries will avoid the industry that places more liability on the designer. Similarly, the end users of an AI system will resist adoption if an AI algorithm carries further liability risk without some compensation. Liability reforms are needed to address these issues. Many of the changes we advocate involve rebalancing liability among the players — from end users (physicians, drivers, and other consumers of AI) to more upstream actors (e.g., designers, manufacturers).

#### All their link evidence assumes reactionary regulation, not liability regulations

Maliha, 21

[George, MD, is a second-year internal medicine resident at the University of Pennsylvania Health System, 7-13-2021, “To Spur Growth in AI, We Need a New Approach to Legal Liability”, Harvard Business Review, <https://hbr.org/2021/07/to-spur-growth-in-ai-we-need-a-new-approach-to-legal-liability>, accessed 7-18-2022, BB]

Granted, a regulatory scheme that attempts to specify an AI system completely will almost certainly hamper innovation. But those costs may be acceptable in particular areas such as drug development, where comprehensive Food and Drug Administration regulatory schemes can replace liability completely.

Given the tremendous innovation engendered by AI, it is often easy to ignore liability concerns until the offering makes it to market. Policymakers, designers, and end users of AI should develop a balanced liability system to facilitate AI — rather than merely react to it. Building this 21st century liability system will ensure that 21st century AI will flourish.

### 2AC – R&D turn

#### Non-unique and link turn – DoD is losing the tech race now – investing more in R&D is key to combine the private and military sectors to maintain their competitive edge

Hoffman, 20

[Daniel, retired clandestine services officer and former chief of station with the Central Intelligence Agency. His combined 30 years of government service included high-level overseas and domestic positions, 7-13-2020, “The US cannot compete with China if our military doesn’t invest in R&D”, The Hill, <https://thehill.com/opinion/national-security/506991-the-us-cannot-compete-with-china-if-our-military-doesnt-invest-in/>, accessed 7-18-2022, BB]

The Department of Defense (DOD) last month declared that 20 Chinese companies, including telecommunications firm Huawei and video surveillance company Hikvision, are a threat to U.S. national security because of their relationship with the Chinese military. DOD emphasized that Chinese president Xi Jinping’s military-civilian fusion strategy of exploiting high-technology is the blueprint for “China’s global ‘return’ to military preeminence.”

China is relentlessly harnessing artificial intelligence, neuroscience and quantum communication to support military research and development and ubiquitous spying on its citizens and adversaries. The Trump administration has taken steps to strengthen our defense against China, but the U.S. will not outcompete China without dominating this century’s revolution in technology.

China’s ruthless communist autocracy imposes its will on China’s businesses through dictatorial fiat. The U.S. is poised to win the competition to develop and deploy high-technology under the power of free markets and innovative defense acquisition policies. The key to ensuring American success is for DOD and private industry to turbo-boost their collaboration.

U.S. private industry now spends more on research and development (R&D) than the U.S. military, which, according to the most recently released budget, calls for increasing research, development, testing and evaluation of spending by 8.7 percent to $104 billion. DOD is less influential today as a purchaser of high-technology than in the past. Defense dominates fewer U.S. industries. In 1965, DOD accounted for over 75 percent of all U.S. semiconductor purchases. By 2012, all governments worldwide represented less than 2 percent of the semiconductor market.

In order to excel in the high-technology domain, DOD must attract companies to participate in the defense marketplace or risk losing its military advantage. DOD needs to incentivize private industry to invest its own resources into military-relevant R&D. Private industry, in turn, will benefit from access to DOD capital, expertise and facilities.

When encountering challenges working with DOD, companies naturally diversify their revenue streams. Some companies choose not to compete for defense contracts because of excessive and constantly changing regulations, increased costs, auditing requirements, and instability of funding caused by sequestration, continuing resolutions and lapses in appropriations.

The COVID-19 pandemic has highlighted the importance of maintaining a domestic manufacturing base and being able to speed up the acquisition process, both of which are critical to the drive for technological superiority. The U.S. must strengthen supply chains to ensure fast, reliable access to critical parts, especially in the event of a national emergency. Even the most technologically advanced capabilities will prove ineffective if we do not have the domestic manufacturing capabilities to manufacture, operate and maintain these systems.