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### 1AC Advantage – Bioterrorism

#### Biotechnology lends itself to terrorism and rogue attacks – must further allied research to preempt and solve these threats

Trump, research social scientist @ UMich, et al ’21.

(Benjamin D. Trump, Marie Valentin Florin, Edward Perkins, Igor Linkov, “Emerging Threats of Synthetic Biology and Biotechnology”, page 2, <https://library.oapen.org/bitstream/handle/20.500.12657/50742/978-94-024-2086-9.pdf?sequence=1#page=14>, Accessed 6-25-22; Analina)

While synthetic biology heralds advances in these felds, its techniques could also be adapted for malicious purposes and used by terrorist organizations, rogue actors, or hostile nations to create dangerous pathogens, invasive organisms, or other disruptive biological agents (Yeh et al. 2012). Such potential makes synthetic biology a dual-use research area of concern (DURC) since the same techniques can be used to benefit or harm people, animals, environments, or nations (Getz and Dellaire 2018). Indeed, there have been 35 confrmed cases of biological weapons deployment between 1970 and 2014 (Franconi et al. 2018). Thus far, the use of advanced biotechnologies for weapons production has mostly been pursued by state-actors. However, synthetic biological weapons are expected to become a larger concern as the field advances and they become increasingly adopted by malicious sub-state or non-state actors (Gronvall 2018). Synthetic biology raises the possibility that pathogenic bioweapons could be designed, developed, and deployed in new ways that diverge from the disease causing characteristics of naturally occurring pathogens (NAS 2018). Traditionally, only known pathogens found naturally in the environment, such as B. anthracis and Y. pestis, were developed as biological weapons because of the inherent infectious characteristics that readily enabled such organisms to serve as weapons. However, as synthetic biology continues to expand its capabilities to create and modify biological weapons, there is an increasing need for biosafety and biosecurity assurances for humans, animals, plants, and the environment. To cope with threats arising from synthetic biology’s dual-use nature, biosecurity is needed to prevent, detect, and determine the source of biological attacks. Biological weapons created from synthetic biology represent a new and unique threat space. Potential threats from synthetic biology include increased pathogen transmissibility between and within species in addition to resistance to established treatments. Synthetic biology can be used to engineer normally benign microbes that produce toxic biological compounds or re-build extinct or hard-to-obtain pathogens from scratch (NAS 2018). The main biotechnologies of concern in the near future (over the course of the next decade or so) are projected to be oligonucleotide synthesis, DNA assembly (assembling multiple smaller fragments of oligonucleotides into the desired larger sequence), and genetic modifcation (editing, deleting, and inserting desired sequences into targeted sites of a genome). Harm may also arise through the purposeful use of these techniques to disrupt human and environmental systems. Malevolent use, but also negligent use (misuse) of synthetic biology techniques, require two circumstances: (a) the spread of information, techniques, or knowhow to utilize synthetic biology’s enabling technologies for irresponsible or nefarious purposes (“information hazard”), and (b) the ability to use such knowledge and tools to generate and disseminate harmful engineered organisms to vulnerable recipients. Creating effective biosecurity procedures and policies to protect humans, agriculture, technology, and the environment from such nefarious usages (or accidental or negligent damage from misuse) will require understanding the current state of synthetic biology.

#### Bioterrorism threatens extinction

Warrel ’21, (Helen Warrell is a Defense and Security Editor at the Financial Times. She specializes in research of Business and Finance, Education, Politics. “Laboratory viruses pose ‘existential threat’, warns bioweapons expert” (Mar 6, 2021) – Accessed on 6-25-22) <https://www.proquest.com/docview/2508509195?pq-origsite=primo> [AO]

Laboratories working on novel viruses and other dangerous pathogens must be more tightly controlled to prevent accidents or terrorism causing another pandemic, a leading bioweapons expert has warned. “I think we need to see biological hazards as an existential threat to the 21st century in the same way that atomic science was to the 20th century,” said Hamish de Bretton-Gordon the former commander of the UK’s Chemical, Biological, Radiological and Nuclear regiment. Covid-19 has highlighted the threat caused by highly-infectious viruses, many of which are being studied or stored in facilities around the world with inadequate security protocols, de Bretton-Gordon told the Financial Times. While chemical facilities are closely monitored by the Organisation for the Prohibition of Chemical Weapons, there is no such designated body to police biological labs. “The biological weapons convention says you should adhere to these rules, you should follow these guidelines and if there's an accident, you should report it, but people have only paid lip service to that,” said de Bretton-Gordon, who led the British army’s responses to anthrax, sarin and chlorine gas attacks in Iraq and Syria, and also commanded Nato’s Rapid Reaction CBRN battalion. “The opportunity for theft, accident or leakage is high. Now that we’ve seen how quickly a pathogen can spread . . . we need our security to be absolutely watertight.” The former commander’s security warnings come as a World Health Organisation team investigating the origins of the pandemic has returned from China’s Wuhan Institute of Virology. The lab had been conducting experiments on bat coronaviruses in 2019 and quickly became the focus of theories that the novel coronavirus could have been released via a leak. De Bretton-Gordon said although this scenario was unlikely, the coronavirus pandemic has demonstrated the dangers that a lab breach would pose. The most dangerous pathogens such as Anthrax and Ebola are kept in maximum containment Bio Security Level 4 labs, of which there are nearly 50 around the world according to a 2017 WHO study, although this list is now out of date. These include the Wuhan facility and the UK’s Defence Science and Technology Laboratory in Porton Down. BSL-4 labs are usually subject to high national security regulations and WHO biosecurity guidelines, but standards are not enforced or monitored at an international level. The only mandatory inspections occur at the two labs which contain the last remaining stocks of the smallpox virus: Russia’s Vector Institute in Siberia, and the US Center for Disease Control in Georgia. Those facilities are visited every two years by the WHO to ensure safe storage and research procedures. Even before the pandemic, there were concerns that safety standards at BSL-4 labs were not universally observed. US diplomats who visited the Wuhan Institute of Virology in 2018 warned of a “serious shortage of appropriately-trained technicians and investigators needed to safely operate this high-containment laboratory,” according to diplomatic cables seen by the Washington Post. Professor Gregory Koblentz, a biodefence expert at George Mason University in Virginia, said the WHO’s difficulties in establishing basic facts about safety and security at the Wuhan Institute for Virology “indicates that we do not have sufficient oversight over these facilities and the activities happening inside them”. “In the next couple of years there will definitely be more countries building BSL-4 labs,” he added. “So we need to be more proactive and develop better oversight now to prevent this increased research [on viruses] resulting in more accidents or reckless behaviour that could cause an outbreak that’s entirely avoidable.” Pathogens such as influenza and botulinum are usually kept at lower security in BSL-3 labs, which are subject to varying national guidelines. There are no official estimates of how many such labs exist around the world, though the figure is expected to be well over 3,000, according to de Bretton-Gordon. Koblentz is working with Dr Filippa Lentzos, an expert in biological threats at King's College London, to compile an unofficial database of BSL-4 labs which they will present at the World Health Assembly in May. The pair hope to extend the project to cover BSL-3 labs too. The WHO told the FT it took the issue of lab biosecurity “very seriously” and that it was “aware of the growing demand and interest in BSL-4 labs”. “In principle, all existing BSL-4 or similar facilities are under the strict oversight of respective national regulatory bodies,” it said. “Whether or not there is a need for an additional international or overarching regulatory framework is a matter for WHO member states to discuss.” De Bretton-Gordon served for 23 years in the British army, spending over a decade focused on chemical and biological attacks. He described biological weapons as “morbidly brilliant” because of their effectiveness and the fear they induce, adding that virus outbreaks in recent years had focused the minds of security officials. Ben Wallace, UK defence secretary, warned last month that there was a “growing threat of chemical or biological [attack]” around the world, and said the availability of information on the internet had provided a “turbo boost” for bad actors seeking to research these weapons. At the height of the 2014-16 Ebola crisis, de Bretton-Gordon said he had provided advice to the US security services over concerns that terrorists would intentionally infect a suicide bomber with the virus before detonating explosives in a confined space such as the subway. At the same time, advances in synthetic biology have created new engineered pathogens, which he feared could also be put to malevolent use. “Perhaps, before December 2019, the focus of security services was elsewhere,” he said. “I'm pretty certain they’re taking this matter extremely seriously now.”

#### Biotech leadership deters bioweapon development and use – allied coop creates consistency and prevents theft

Scott Moore ’21, February 17, a lecturer in political science at the University of Pennsylvania and previously served at the U.S. Department of State, where he worked on the Paris Agreement, “In Biotech, the Industry of the Future, the U.S. Is Way Ahead of China,” LAWFARE, https://link.springer.com/content/pdf/10.1007/978-94-024-2086-9.pdf

Biotech is such a critical area for technological competition between the U.S. and China because it is transforming fields from medicine to military power. The great advances of the 19th century, like chemical fertilizers, resulted from mastering chemistry. In the 20th century, mastery of physics led to nuclear energy—and, more ominously, nuclear weapons. In the 21st century, biology offers a similar mix of peril and promise. This was illustrated dramatically by the award of the 2020 Nobel Prize for the discovery of an enzyme system known as CRISPR-Cas9, which allows an organism’s genomes to be edited with high precision. It is a transformational breakthrough. But while CRISPR shows great promise in the development of new cures for long-untreatable diseases, it could also lead to a whole new generation of deadly bioweapons.

That’s a prospect that increasingly alarms U.S. intelligence officials. In 2016, then-Director of National Intelligence James Clapper warned Congress that “[r]esearch in genome editing conducted by countries with different regulatory or ethical standards than those of western countries probably increases the risk of the creation of potentially harmful biological agents or products.” Although Clapper didn’t name specific countries, it soon became clear that he was referring mainly to China. Four years later, his successor, John Ratcliffe, issued a far more pointed warning that “China has even conducted human testing on members of the People’s Liberation Army in hope of developing soldiers with biologically enhanced capabilities. There are no ethical boundaries to Beijing’s pursuit of power.” Such capabilities are almost certainly only speculative—but they underscore why biotech leadership is so important for national security as well as economic competitiveness.

Beijing has long envied the United States’s dominant position in biotechnology and spent heavily to overtake it. Biotech has been a priority sector for state investment since the 1980s, and by one estimate Beijing had poured some $100 billion into the sector by 2018. Nowhere did it lavish more attention or invest more of its propaganda power than in developing a coronavirus vaccine. State media have spent months crowing that “China is working around the clock for breakthroughs in COVID-19 vaccines.” Yet despite this push, China’s vaccine program quickly took on a Potemkin air. In February 2020, barely two months after the onset of the pandemic and after a supposedly crash vaccine effort, a military doctor stood in front of a Chinese flag to receive what was billed as an experimental vaccine dose but was widely suspected to be a staged photo op. Now, having spent months talking up its two primary vaccine candidates to developing countries like Brazil and Indonesia, both of which have entered into purchase agreements with Chinese biotech firms, Chinese officials face severe mistrust among their nation’s overseas partners.

For China’s leaders, the disappointing returns on their big bet on biotechnology look likely to cause them more headaches at home as well as abroad—there are already signs that affluent Chinese place more trust in foreign-developed coronavirus vaccines than the homegrown ones produced at such great expense. For U.S. officials, though, China’s relative underperformance in vaccine development presents an opportunity to reassert the United States’s leadership in biotechnology and public health and bolster the nation’s depleted soft power in the process. The Biden administration has already signaled it will reengage in multilateral bodies such as the World Health Organization.

Yet the U.S. shouldn’t stop there. Washington should begin thinking now about how to emulate the success of the President’s Emergency Plan for AIDS Relief (PEPFAR)—which, though imperfect, is widely regarded as one of the most successful single public health interventions in history—to address growing disparities in access to coronavirus vaccines between countries. At the moment, vaccine supplies are controlled largely by rich countries, creating the risk of moral and public health failure if the gap persists. While COVID-19, the respiratory disease caused by the novel coronavirus, differs in many respects from AIDS, PEPFAR combined research, prevention, and access to therapeutics. Developing a comparable institutional structure to close the coronavirus vaccine access gap is the right thing to do—but it would also go a long way to restoring America’s battered global reputation.

At the same time, the United States can’t afford to rest on its laurels in biotechnology, or any other field. Aside from China, other nations like Singapore and Israel have also invested heavily to develop their biotechnology sectors, with Israel in particular giving rise to a thriving biotech industry. U.S. public investment in basic scientific research and development has meanwhile been on the decline for decades, and there are worrying signs that America’s once world-beating innovation ecosystem is less productive, and less entrepreneurial, than it once was. Despite strengths in translational research, moreover, the frontiers of biology increasingly sit at the intersection with other disciplines like computer science, meaning that funding agencies, universities and other organizations need to break down disciplinary silos. Boosting support for biotechnology research, while reforming how that money is used, will go a long way toward shoring up the United States’s leading position in the global biotech sector.

The U.S. biotechnology sector also faces other threats, not least growing espionage and intellectual property theft by foreign actors, especially those linked to China. Several high-profile cases brought by the U.S. Department of Justice’s China Initiative have involved biotechnology researchers, and American biotech firms have been top targets for cyber theft and intrusion. Sustained outreach to researchers and research institutions is critical to preventing such theft. But efforts to clamp down on the threats posed by espionage and intellectual property theft can easily go too far and must preserve the researcher mobility and data-sharing that is essential to doing cutting-edge science.

Beyond its shores, the United States should work with its partners and allies to enhance export controls on dual-use biotechnology—used for both peaceful and military gain—especially DNA templates. Many forms of genetic material and synthetic biology products are already subject to U.S. export controls, but gaps remain, and screening for genetic sequence orders relies primarily on voluntary regulation by biotech firms. Better coordinating export controls among major economies and U.S. allies can dramatically reduce the risk of sophisticated bioweapons development in the decades to come.

When it comes to biotechnology, the industry of the future, the U.S. remains well ahead of its rivals, including China. That’s something Americans can, and should, take pride in. But the U.S. must make proactive investments and undertake significant reforms now to ensure that things stay that way.

### 1AC Advantage – U.S. hegemony

#### NATO biotech coop maintains U.S. hegemony and neutralizes China’s rise

Matthew P. Goodman ’21, October 13, Senior Vice President for Economics, “Toward a T12: Putting Allied Technology Cooperation into Practice,” CSIS, https://www.csis.org/analysis/toward-t12-putting-allied-technology-cooperation-practice

The other driver of increased interest in allied technology cooperation is the fact that the United States no longer holds an unrivaled lead in the development and deployment of critical technologies. This is partly the result of underinvestment in the traditional foundations of U.S. innovation—such as infrastructure, federal research and development (R&D), relevant education and skills—and partly due to rising capabilities in other countries. In 2020, the United States ranked ninth behind European and Asian competitors in Bloomberg’s global innovation index. Japan, South Korea, Taiwan, and the Netherlands have joined the United States as critical players in semiconductor manufacturing. China, Europe, Canada, and Israel all have formidable capabilities in AI and biotech. And the global telecommunications equipment market is dominated by two Chinese and two European suppliers; the United States has no integrated-hardware suppliers in a sector that forms the backbone of today’s digital economy.

China poses a particular challenge for the United States in the technology arena. Supported by a rolling series of initiatives launched by Beijing over the past 15 years—including the “indigenous innovation” policies of the mid-2000s, the “Made in China 2025” plan released in 2015, and today’s “dual circulation” strategy—Chinese companies have rapidly move up the technology ladder. According to the latest Global Innovation Index, China is ranked 12th in the world, a significant rise from its 35th place ranking in 2013. China now leads in the rollout of fifth-generation (5G) telecommunications systems, with the greatest number of cell sites deployed and per capita network subscribers. It also leads in AI adoption rates; an August 2019 report by the Center for Data Innovation found that 32 percent of Chinese firms had adopted AI technologies, compared to 22 percent of U.S. firms.

China’s growing technological prowess has been a double-edged sword for the United States. On one hand, it has powered China’s growth, providing new sources of economic demand and market opportunities for U.S. exporters. It has enabled global supply-chain efficiencies, with U.S. producers using China as a source of high-tech inputs and a platform for final assembly. It has also promoted beneficial R&D collaboration and enhanced the U.S. talent pool as Chinese researchers and entrepreneurs have moved across the Pacific.

On the other hand, China’s technological rise has created a new competitive challenge for the United States, with several dimensions. Chinese technologies in many areas, from 5G equipment to digital payments, are now global market leaders. China’s progress in AI, drones, and other technologies with military applications has raised serious national security concerns in Washington. And Beijing’s massive subsidies and other distortive industrial policies threaten to tilt the competitive playing field in China’s favor and upend the rules and norms of the global economy that the United States has championed since World War II. At the same time, growing technological interdependence with China has created supply-chain vulnerabilities in critical technologies, from semiconductors to biopharmaceuticals.

Against the backdrop of these shifts in technology and the global competitive landscape, allied technology cooperation could kill several birds with one stone: supporting U.S. and allied competitiveness; improving global supply chain resilience; upholding and updating the rules and norms of the global economy; addressing shared global challenges, such as climate change and pandemics; and helping mitigate the national security and other risks that some dual-use technologies pose.

This brief is primarily focused on the promotion of new technologies to achieve the more positive of these goals. The protection of critical technologies for national-security purposes is no less important but has received more attention to date from policymakers and scholars alike, including at CSIS. For example, the CSIS Economics Program released a report in August 2020 highlighting lessons from an allied-government forum convened to discuss multilateral cooperation on investment screening mechanisms, export controls, and other technology-transfer policies. Moreover, there are particular complexities involved in the promotion of new technologies that can impede cooperation, including market competition among allied firms and divergent regulatory philosophies across countries.

Early Progress, Challenges Ahead

The Biden administration has moved quickly to lay the foundations for allied technology cooperation. In March, the president joined his counterparts from Japan, Australia, and India for the first-ever Quad summit, at which the leaders agreed to establish a critical and emerging technology working group. Similar groups were set up as part of the U.S.-Japan Competitiveness and Resilience (CoRe) Partnership and the U.S.-EU Trade and Technology Council (TTC). The agenda for each of these groups includes a heavy focus on cooperation to promote and protect critical technologies, including by jointly developing standards in areas like AI and the Internet of Things, harmonizing data governance rules, and aligning investment screening and export control policies. The findings of the Biden administration’s 100-day supply chain review, released in June, stressed the importance of working with allies and partners to address supply chain vulnerabilities in four critical sectors, including semiconductors.

Putting these cooperative efforts into practice will be more challenging than agreeing to them on paper. While the members of these various groupings espouse democratic values and a commitment to multilateralism, each brings to the table a distinct philosophy and approach to technology development and digital governance. The European Union, for example, considers personal data privacy a fundamental human right, deserving of thorough protection under law and regulation. The United States, by contrast, is in the midst of a roiling debate about the appropriate balance between data privacy and the use of data for commercial, national security, and other purposes that may be at odds with individual privacy. In the area of standard setting for new technologies, most countries take a top-down, government-led approach, while in the U.S. case, this work is led by the private sector. More broadly, views on the appropriate balance between market mechanisms and state intervention, or between free trade and protection of domestic producers, vary widely among potential members of a technology alliance. These differences in philosophy and approach produce different forms of law, regulation, and policy across a potential T12 that will be difficult to reconcile in practice.

Moreover, while the United States and its allies share many values and interests, they are also economic competitors. U.S., European, and Asian companies compete globally for profits and market shares. Their willingness to collaborate only goes as far as will benefit them commercially, or as far as government incentives can sway them to collaborate through subsidies or other incentives. And for political, national security, and other reasons, governments naturally prioritize the interests of their own companies over those in other countries. In addition to impeding collaboration, national efforts to promote onshore production in critical technologies could lead to redundancy and global overcapacity.

This leads to a final set of challenges: organization of allied efforts. Committing to cooperation in a press release is one thing; follow-through is far more difficult. Working groups will need to have the right structure, participants, and agenda. Leadership and accountability are critical, with clear points of contact and processes of decisionmaking within and among governments. These organizational challenges will be especially difficult in a loose, fluid technology alliance in which there may be differeces over who should be at the table (not just countries but government agencies, private-sector representatives, and others); which sectors and technologies should be prioritized; and what kind of practical cooperation is appropriate. Moreover, it will be important to ensure that new allied efforts do not duplicate or disrupt existing technology collaborations.

Setting Priorities

The effectiveness of any technology alliance will depend on prioritization. Allies cannot work together on every new technology or address every issue that either enables or impedes cooperation. They will have to make choices, particularly on two questions: Which technologies are most critical for—and amenable to—allied cooperation? And where along the chain of technology development are the greatest opportunities for—and obstacles to—allied cooperation?

WHICH TECHNOLOGIES?

In his first major speech as President Biden’s national security adviser, Jake Sullivan highlighted four sectors that will define what he called “the third wave of the digital revolution”: AI, biotechnology, semiconductors, and telecommunications. This is a reasonable list around which to explore the possibility for allied cooperation. These sectors increasingly shape how we make decisions, how we physically live and breathe, how we power technology, and how we communicate. The potential for growth and innovation in these four areas over the next decade or two is enormous. They are also technologies on which international competition is likely to be most intense—and on which the benefits of cooperation are potentially greatest. China, in particular, has set its sights on global preeminence in all four of these areas.

Each of these areas has great potential for expanded cooperation among allies:

AI refers to the creation of smart machines that can mimic human learning and thought-process capabilities. This technology allows machines to operate human-run tasks, potentially improving the cost, accuracy, and efficiency of these activities. China is dedicating significant state resources toward AI tech development, with potentially troubling commercial and military implications for the United States and its allies. There is a solid foundation for allied cooperation on AI. Research collaboration in this area is already well established, including a formal partnership between the U.S. National Science Foundation and the Natural Sciences and Engineering Research Council of Canada on technology research, of which AI is an important component, and the 2020 U.S.-UK declaration to further cooperation in AI R&D. Expanding this kind of research collaboration, particularly on scaling and commercializing AI technologies, could help get allied AI products to market and ensure they are competitive with Chinese alternatives. Moreover, there are several useful international policy frameworks on which to build out allied cooperation. These include the G7-led Global Partnership on Artificial Intelligence (GPAI), the Organization of Economic Cooperation and Development’s (OECD) Principles on AI, and AI provisions in regional trade arrangements, including the Singapore-led Digital Economy Partnership Agreement (DEPA).

Biotechnology, the creation of products through biological materials or processes, has enormous potential for solving health, agriculture, and environmental challenges. Moreover, one of the most important areas of potential for biotech lies in its ability to transform the manufacturing sector. Biomanufacturing—the application of biotech in manufacturing—will allow countries to not only create different types of products but to do so in new, more sustainable ways. For example, Cambium BioMaterials, a Bay Area start-up, recently biomanufactured an enhanced flame-retardant material using plant-based ingredients that is now being used in commercial and military grade. China, the world’s leading manufacturer, already dedicates significant resources to support innovation in biotech, for potential commercial and military purposes. Allied cooperation on biotech is nascent at this point, but the United States, Germany, Singapore, and Israel are notable leaders in the field, and there is significant scope for building out collaboration.

Semiconductors are “the brains of modern electronics.” They control the flow of electrical currents in electronic devices, making them a critical component of the technologies of both today and tomorrow. And as the world’s digital transformation accelerates, so does the demand for semiconductors. The world needs more large-scale semiconductor production facilities to meet this demand, but because it is increasingly expensive and complex to produce semiconductors, no one country can solely support this expansion. The semiconductor industry is already one that benefits from specialization—and cooperation—across allies and partners, with the United States dominating front-end research and design, and East Asian countries—including Taiwan, South Korea, and Japan—leading the manufacturing segment of the supply chain. Yet China has set its sights on assuming global leadership in advanced semiconductor manufacturing, as detailed in Beijing’s 2014 Guidelines to Promote National Integrated Circuit Industry Development. In response to that and other foreign government subsidy programs for semiconductor development, the U.S. Congress enacted the Creating Helpful Incentives to Produce Semiconductors for America (CHIPS) Act in the 2021 National Defense Authorization Act. If funded, this would direct $52 billion of federal money toward domestic semiconductor manufacturing and R&D. The Biden administration has supported the CHIPS Act as critical to sustaining U.S. competitiveness in semiconductors, but it will also be important to enhance cooperation with allies and partners on this foundation technology.

Telecommunications—the transmission of data via wire, radio waves, optical fiber, and other means—are the backbone of today’s interconnected economy. The technology underlying telecom networks has advanced rapidly in the past two to three decades through several “generations.” The global market for telecom equipment is dominated by a handful of vertically integrated suppliers such as Huawei and ZTE of China, Ericsson of Sweden, and Nokia of Finland. The sector is highly susceptible to first-mover advantages; the first company to deploy the latest generation network (5G) doesn’t have to compete with other companies for subscribers and network partners, amassing large shares of both and making it easier for the company to deploy other technologies (telecom equipment, phones, radios, etc.) to their subscribers and network partners. China has moved aggressively in international forums and markets to try to harness the first-mover advantage by setting standards that favor its telecom networks and equipment. This poses a critical challenge to the United States and allied countries, particularly in their ability to secure competitive market shares for their telecom and other network-dependent technology. Allied efforts are already underway to try to diminish the impact of the first-mover advantage by promoting the use of the Open Radio Access Network (O-RAN) platform, which is not reliant on supplier-specific software or hardware. The O-RAN Alliance, a group of over 270 telecommunications operators and vendors that are dedicated to creating “fully interoperable mobile networks,” and the Open RAN Policy Coalition, a group of 60 technology companies from around the world dedicated to the advancement and adoption of open RANs, are critical groups of allied companies working to foster a collaborative environment for telecommunication technology. The United States and Japan have been particularly active in their efforts to innovate in telecoms and compete with China, notably through joint investments in 6G development under the countries’ newly launched Global Digital Connectivity Partnership. Allied efforts in telecommunications can help expand these efforts and increase O-RAN adoption.

WHERE TO FOCUS COOPERATION?

After agreeing on the technologies to prioritize, allies will need to decide how to direct their efforts along the technology development chain and what substantive issues to focus on. There are opportunities to expand cooperation across a range of activities, from research collaboration to joint financing. In roundtables and conversations with experts conducted by the CSIS Economics Program as part of this project, two cross-cutting issues repeatedly came up: data and standards. Focusing allied efforts on aligning approaches in these two areas would make a significant contribution to joint promotion of critical technologies.

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Data

In 2020, the world generated some 44 zettabytes of data—“40 times more bytes than there are stars in the observable universe.” Data are everywhere, fueling technology and informing our decisions and innovation choices. In biotechnology, for example, data analytics help biopharmaceutical researchers identify drug candidates for early-stage testing and drug development. Progress in AI development is largely a function of data and the computing power to process it.

These and similar innovations are dependent on data quantity, quality, and diversity—how much data one has, how accurate and usable those data are, and how many different types of data are available. As the Global Data Alliance, an industry coalition, notes, greater data quantity allows researchers and firms to “identify meaningful insights, patterns, and connections that can aid R&D teams in discovering and developing novel solutions to scientific and technical challenges.” Access to high-quality data enables faster, more reliable discoveries. Data diversity helps researchers and firms broaden these discoveries, applying them to new products, patients, and processes.

Data are essential to allied technology efforts for the seemingly simple reason that sharing data is beneficial. Sharing increases the quantity of data and therefore the potential for new discoveries. But it also improves the quality of data, by allowing entities to verify their data against data held by others and to inform, supplement, and complement their data. Sharing data can also increase the diversity of data sets, allowing researchers and producers to apply their results to a wider range of products and demographics. This is especially important in the development of AI, where access to different types of data allows machines to make better decisions.

For all the benefits of data sharing, a number of frictions impede allied cooperation in this area. These include national laws and policies to protect the privacy and security of sensitive data. Every government has a legitimate interest in ensuring that sensitive personal, business, and government information does not get into the wrong hands, and law and policy in this area nearly always restrict the use and sharing of this data in some ways. The problem is when these restrictions inhibit reasonable, responsible, and ethical data sharing with organizations in like-minded countries involved in joint research projects. There are emerging differences in national philosophies and regulatory approaches to data privacy and security that complicate, or may preclude, allied data sharing in support of joint promotion of critical technologies.

As mentioned earlier, the European Union considers personal data privacy a human right and has put into law what is arguably the global standard for data protection in its General Data Protection Regulation (GDPR). Several other countries have enacted data laws based on GDPR, including South Korea and India. For its part, the United States has a patchwork of privacy rules at the state and sectoral level but no comprehensive federal legislation in this area. By contrast, data security has taken on new salience in Washington, as highlighted by President Biden’s signing of an executive order in this area in June. How this will affect Washington’s historic position that data should generally flow freely across borders remains to be seen.

Meanwhile, several allied and partner countries have also enacted data localization policies, which require data to be stored domestically. This can silo data within states, impede data flows, and undermine innovation. According to a report by the Information Technology and Innovation Foundation (ITIF), as of 2020, 62 countries had enacted 144 data localization policies. Many governments such as the European Union and South Korea claim that data localization is necessary to protect “important” or “sensitive” data from being shared; U.S. financial regulators take a similar view with respect to financial data. However, localization policies are often broadly applied and seem to be less about legitimate protection than about protectionism.

Efforts to bridge the differences among allies on data flows, privacy, and security have so far had mixed success. Japan has usefully put forward the concept of “data free flow with trust (DFFT)” and won both G7 and G20 endorsement of the idea, but it has yet to be turned into an agreed set of rules and practices. To facilitate data flows across the Atlantic, the United States and the European Union negotiated a “privacy shield” in 2016, providing a mechanism for companies to comply with GDPR regulations when transferring data from Europe to the United States. However, in 2020, the European Court of Justice found that the framework failed to meet GDPR standards and subsequently invalidated the policy. Without a replacement framework, transatlantic technology cooperation will be constrained.

More positively, as detailed in a CSIS report in April 2021, there has been useful work on developing agreed approaches to data governance in a number of recent trade agreements, particularly among U.S. partners in the Asia-Pacific region. The U.S.-Mexico-Canada Agreement (USMCA) incorporates and builds on commitments to substantially free cross-border data flows and other rules the United States won agreement to in the Trans-Pacific Partnership (TPP) before it pulled out in early 2017. Similar provisions were included in the U.S.-Japan Digital Trade Agreement concluded in 2019. And Singapore has been a leader in aligning data governance policies through its bilateral trade agreements, in the Asia-Pacific Economic Cooperation (APEC) forum and through its innovative DEPA arrangement.

Moving forward, to capitalize on the innovation gains that come from sharing data and promote meaningful allied technology cooperation, the Biden administration should focus on several lines of effort to reconcile the divergent approaches to data governance among its key allies. First, it should work with Congress to enact comprehensive federal privacy legislation. Second, it should use the new TTC forum with the European Union to align transatlantic positions on data privacy, security, and flows. Third, it should embrace the work on data governance in the Asia-Pacific region, starting by docking onto DEPA. And fourth, it should work to identify areas where U.S. agencies can pool data with like-minded countries in the interest of conducting joint research on issues of mutual concern. (For example, NIST could combine data with UK or EU counterparts to improve the accuracy of facial recognition tests.) These efforts will help improve the quantity, quality, and diversity of allied data sets, enabling greater innovation opportunities for allied researchers and firms in critical sectors such as AI, biotech, semiconductors, and telecommunications.

Standards

The term “standards” is used to describe a broad array of rules, metrics, and norms, ranging from ubiquitous technical specifications like Bluetooth to safety requirements such as the warning labels found on lawn mowers to expected approaches that establish a certain baseline such as in accounting standards. In all these variations, standards convey a sense of expectation of performance. There are broadly two types of standards: consensus standards and technical regulations. Consensus standards are the outcomes of processes where general agreement rather than unanimity is sought and the development of such outcomes is voluntary. Technical regulations refer to the use of standards by the government to meet a specific policy objective and where conformance with the standard is mandatory.

Standards are critical to innovation for two reasons: first, they provide a foundation for technology development upon which product differentiation can be made, which makes it easier to deploy competitive products, including by leveraging first-mover advantages; and second, they boost product interoperability and consumer confidence in technologies, expanding existing technology markets and helping to create new ones. The focus here is mainly on voluntary standards because, as with data governance, there is arguably more work to be done to align allied approaches.

Global standards are typically set in a broad range of bodies that are open to participation by all interested stakeholders and where decisionmaking is done by consensus. Examples of such as bodies include the International Organization for Standardization (ISO), the Third Generation Partnership Project (3GPP), and the Institute of Electrical and Electronics Engineers (IEEE). Participants in these bodies include a mix of government and private-sector researchers and other experts from the member countries. The process for reaching agreement on standards varies by organization, with different thresholds in balloting that help establish consensus.

As is the case with data governance, the United States and its allies have different approaches to standard setting. While government agencies such as the National Institute of Standards and Technology (NIST), the Department of Defense, and the Department of Transportation participate in many standard-setting bodies, Washington does not lead in setting technical standards. It is the long-standing policy of the United States to allow the private sector to take the lead, leveraging the extensive technical expertise and experience available in industry and its knowledge of market need and demands. This private-sector–led approach—in which the U.S. government participates as a contributor, user, and enforcer—has helped establish and maintain U.S. industrial and technological leadership since World War II. By contrast, governments in Europe and Asia tend to have a top-down approach to standard setting, establishing standardization priorities and attempting to develop and protect domestic champions. In order to achieve these objectives, these governments often send a large number of officials to push for preferred national outcomes.

While there is a strong case for the U.S. government to step up its long-term game in international standard setting—for example, by investing in and adequately resourcing government experts to participate in global standards work—the likelihood that the United States and its allies will align their approaches in standard-setting bodies is low. In addition to the philosophical differences, these countries are also competitors and want their own companies and technologies to “win” in the marketplace. There are numerous examples of such competition in emerging technologies such as cloud computing, cybersecurity, and advanced manufacturing. Moreover, the industry-led U.S. approach, with its competitive dynamics among actors who have a better sense of the market potential of new technologies than governments, arguably has real advantages over the top-down approach used by Europe and other allies.

A more productive line of effort for U.S. policymakers seeking to promote greater allied alignment in the technical standards would be to encourage pre-standardization cooperation. Here it is useful to explore the concept of “technology readiness levels (TRLs).” These measure the maturity of technology along a spectrum from early-stage basic research to commercialization and deployment of technology. The lower the TRL, the less developed the technology and the greater the need is for fundamental research and development. Collaboration at low TRLs—basic research—is already well established. International standard setting happens at higher TRLs, where, as discussed above, allied cooperation faces a number of challenges. The opportunity lies in the middle of the TRL spectrum, where governments could help researchers collaborate on basic research and develop shared insights and data and, by so doing, set the stage for more productive standards cooperation and, even further along the technology-development spectrum, promote regulatory convergence among allies.

In addition to encouraging pre-standardization cooperation, Washington could do more to engender trust and cooperation with the private sector on standard setting and related policies. With its extensive firsthand experience, the private sector can help the government better understand the true dynamics of standard-setting rivalries in different standards bodies. Greater public-private exchange of perspectives on the commercial and national security dimensions of emerging technologies would also be valuable. Also, as mentioned above, small amounts of additional funding for government experts’ participation in—though not direction of—international standard-setting work could improve public-private coordination and support U.S.-preferred outcomes.

While the focus here has mainly been on technical standards, it is also important for the U.S. government to work closely with allies on aligning regulatory approaches to technology. In addition to promoting positive U.S.-preferred norms such as environmental and social sustainability of technology, these efforts would help minimize the scope for misuse or ethical breaches of new technologies. The OECD Principles on AI, for example, are designed to ensure that development of AI technologies adheres to global democratic and human rights values. The International Bioethics Committee (IBC), housed under UNESCO, is another body working to develop normative requirements to safeguard human rights in the development and use of biotechnologies.

Getting Organized

Promotion of critical technologies is a complex and challenging undertaking, even within a single country. The challenges are compounded when coordinating efforts with other countries. An effective technology alliance will require organizational structures and processes—both within the United States and across allies and partners—that maximize the benefits of cooperation and remove or overcome obstacles.

Effective organization starts at home. The Biden administration has taken some useful first steps in this regard. They have rhetorically made the case for promotion and protection of critical technologies and for coordinating these efforts with allies. The White House has created a new senior position in the National Security Council staff for technology policy coordination and has elevated the head of the Office of Science and Technology Policy (OSTP) to cabinet level to improve internal U.S. government coordination. And it has made technology cooperation a top agenda item for plurilateral forums of like-minded countries such as the Quad and G7, as well as in bilateral engagement with Europe, Japan, and other technology partners. Meanwhile, the U.S. Congress has taken steps to provide legislative and financial support for allied technology cooperation, including through measures such as the U.S Innovation and Competitiveness Act (USICA) passed by the Senate in June.

An effective technology alliance will require organizational structures and processes—both within the United States and across allies and partners—that maximize the benefits of cooperation and remove or overcome obstacles.

However, there are still gaps and inconsistencies in Washington’s efforts at home to set the groundwork for a technology alliance. Announcing a new policy direction is one thing; carrying it out in a sustained and consistent way is far more challenging. This requires a well-functioning interagency process under the direction of the White House that deploys relevant parts of the U.S. government. The Biden administration has been slow to appoint senior officials at the under- and assistant-secretary level at key economic agencies, who are critical to effective policy formulation and implementation. Even when these officials are in place, they need to be empowered to do the day-to-day work of coordinating policy with allies, with direction—but not micromanagement—from the White House.

Moreover, Washington needs to make important substantive investments at home if it wants to win support from allies for its positions on the cross-cutting issues discussed above. To promote its preferred approach to global data governance, for example, the United States needs to enact comprehensive federal privacy legislation. It needs to revitalize the U.S. approach to standard setting, doing more to support the efforts of private companies and experts in this area. And it needs to recommit to the U.S. innovation base by, among other things, increasing federal R&D spending, investing in skills, and building digital infrastructure. (Detailed recommendations in these areas were included in the CSIS Trade Commission’s October 2020 report, Sharpening America’s Innovative Edge.)

One more chore for the Biden administration is to reconcile the tension between its appeal to allies for technology cooperation, on one hand, and its stated preference to “buy American” and to onshore production of critical technologies and supplies, on the other. Allies will be reluctant to sign onto cooperation if they have doubts about what is in it for them. This is an even more pointed question for allies still subject to tariffs imposed by the Trump administration.

Progress on these domestic organizational and messaging challenges will need to be complemented by work to organize international cooperation on technology promotion. Again, the Biden administration has made a good start on agenda setting in the Quad and G7 and with bilateral partners such as Japan, South Korea, and Germany. It has wisely avoided calling for a single T12 forum with a predetermined group of countries; the kind of “variable geometry” it has been promoting is more suited to an issue area with a complex mix of critical technologies and country capabilities.

But there is still work to be done to stitch all these strands together. It is especially important for Washington to resolve its differences with Europe over the regulation of technology and data, or at least to close the gap enough to align transatlantic (essentially, G7) and transpacific (Quad) approaches to these issues. It will also be important to pull in other economies as needed that are not in the Quad or G7 but have advanced capabilities in key technologies—such as the Netherlands, South Korea, and Taiwan on semiconductors or Finland and Sweden on 5G—without making the web of allied cooperative efforts too cumbersome.

With more alignment of key players within a technology alliance, Washington will then want to reinforce and build out work in international institutions in which it retains disproportionate influence to develop U.S.-preferred rules, standards, and norms. NATO and the OECD have done useful work to promote common principles on AI, for example; the latter has also done important work on data governance. Allies will also need to align positions in standard-setting bodies with a more diverse membership such as the International Telecommunication Union.

**NATO biotech involvement is key to check China and maintain international order**

**SOARE, 21** (SIMONA R. SOARE, Research Fellow for Defence and Military Analysis， PhD in Political Science from the National School for Political and Administrative Studies in Bucharest, 6-11-2021, accessed on 6-25-2022, The German Marshall Fund of the United States, "Innovation as Adaptation: NATO and Emerging Technologies", <https://www.gmfus.org/news/innovation-adaptation-nato-and-emerging-technologies)-JLI>

The second and related driver is maintaining a technological edge. The perception that technological dominance (and the imperative to avoid strategic technological surprise) is an inherent strategic advantage is well established in the strategic culture of NATO and many allies. Over the past two decades, the technological dominance of the West—from stealth to long-range precision strike capabilities—has been increasingly challenged, especially by Russia and China. Officially, NATO and some of the leading allies continue to pursue the goal of maintaining a technological edge—in relation to EDTs.12 This message is an essential component of NATO’s geopolitical signaling and consistent with its policy of competing from a position of strength. However, there is a growing informal recognition among the allies of the magnitude of the challenge to maintain technological dominance across all critical emerging technologies. In view of the trajectory of Chinese investment in EDTs, it is important for NATO to develop its resilience, deterrence, and defense, to improve its adaptability, and to be prepared to mitigate adverse conditions where rivals temporarily achieve technological parity or even dominance.

The third driver is to foster the interoperability of military capabilities that are enabled by emerging technologies13 and to incentivize transatlantic defense cooperation on EDTs to avoid or bridge technology gaps between allies. This goes to the core of NATO’s mission to deter and defend against threats, but it is an enduring challenge. Streamlining standardization and testing, evaluation, verification, and validation procedures remains important. However, NATO should also double down on its efforts to ensure greater compliance with interoperability and baseline requirements for the security of critical infrastructure. Recent challenges in relation to national compliance with the 2019 NATO requirements for security of telecommunications infrastructure are a case in point, but there are wider and enduring challenges with hardware and communications interoperability.14 While the plans for the new Defence Innovation Accelerator promise to contribute to maintaining NATO’s technological edge, it also remains to be seen whether they will contribute sufficiently to building technology capacity among some of the smaller and more vulnerable allies. As they establish governance procedures and participation rules, allies need to mitigate the risk that the accelerator could contribute to a two-speed, two-tier alliance, dividing the technology haves from the technology have-nots.

The fourth driver is a desire to lead in setting global, normative EDTs governance. The Advisory Group on Emerging and Disruptive Technologies, for example, has emphasized that NATO “is exceptionally well placed to be a global driver of a values-based innovation agenda.”15 Democratic values are at the core of what defines security for transatlantic allies and the target of adversarial subversive measures. Consequently, embedding democratic values into the development, adoption, and use of EDTs by the allies is key to NATO’s mission. Thus, innovation efforts need to be closer linked to NATO’s democracy-centered tech diplomacy with like-minded global partners, some of whom could be invited to join the Defence Innovation Accelerator.

The fifth driver is organizational and procedural change, notably to build “a resilient innovation pipeline for the alliance”16 and a sustainable innovation ecosystem. This is a more challenging undertaking than it may first appear. Military organizations have historically innovated more coherently and efficiently than other public organizations.17 However, in the case of EDTs, this pattern is challenged. NATO and allied military organizations are not driving technological progress, are not the main agents of innovation, and depend on effective civilian-military collaboration for their own innovation efforts. Defense Agency organized a ten-day Technology Foresight Exercise to inform the revision of the European research and capability development priorities.25 Rob Murray, the head of NATO Innovation Unit has argued that “the nations that win [the technology adoption] race may be those with the most agile bureaucracy rather those with the best technology.”26 Organizational change is a prerequisite of success in defense innovation and the adoption of EDTs—and one aspect of NATO’s adaptation patterns. But it is only one measure of its success. Setting the right benchmarks for defense innovation and EDTs is also critical and it requires a link to clear and measurable improvements in military capabilities, posture and power projection, enhanced resilience, and deterrence and defense in a multi-domain framework, as well as the ability to compete below the threshold of armed conflict against hybrid threats. To this effect, NATO needs to be linked to more experimentation, wargaming, and red teaming to determine how deterrence, defense, and operational capacity will evolve, how resilience can be enhanced, and how to disrupt rival coercive operations, above and below the threshold of armed conflict, across all domains of warfare.

#### Losing the tech race to China causes nuclear escalation among major powers

Kroenig, Mathew, Professor in the department of government at Georgetown, Winter 2021 (“Will Emerging Technology Cause Nuclear War?: Bringing Geopolitics Back In”, Air University, Winter, 2021, <https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15_Issue-4/D-Kroenig.pdf>, accessed 6/27/22, ,FLC)

Some may argue emerging military technology is more likely to result in a new tech arms race than in conflict. This is possible. But Moscow and Beijing may come to believe (correctly or not) that new technology provides them a usable military advantage over the United States and its Allies and partners. In so doing, they may underestimate Washington.

If Moscow or Beijing attacked a vulnerable US Ally or partner in their near abroad, therefore, there would be a risk of major war with the potential for nuclear escalation. The United States has formal treaty commitments with several frontline states as well as an ambiguous defense obligation to Taiwan. If Russia or China were to attack these states, it is likely, or at least possible, that the United States would come to the defense of the victims. While many question the wisdom or credibility of America’s global commitments, it would be difficult for the United States to simply back down. Abandoning a treaty ally could cause fears that America’s global commitments would unravel. Any US president, therefore, would feel great pressure to come to an Ally’s defense and expel Russian or Chinese forces.

Once the United States and Russia or China are at war, there would be a risk of nuclear escalation. As noted previously, experts assess the greatest risk of nuclear war today does not come from a bolt-out-of-the-blue strike but from nuclear escalation in a regional, conventional conflict.53 Russian leaders may believe it is in their interest to use nuclear weapons early in a conflict with the United States and NATO.54 Russia possesses a large and diverse arsenal, including thousands of nonstrategic nuclear weapons, to support this nuclear strategy.

In the 2018 Nuclear Posture Review, Washington indicates it could retaliate against any Russian nuclear “de-escalation” strikes with limited nuclear strikes of its own using low-yield nuclear weapons.55 The purpose of US strategy is to deter Russian strikes. If deterrence fails, however, there is a clear pathway to nuclear war between the United States and Russia. Will Emerging Technology Cause Nuclear War?: Bringing Geopolitics Back In STRATEGIC STUDIES QUARTERLY → WINTER 2021 69 As Henry Kissinger pointed out decades ago, there is no guarantee that, once begun, a limited nuclear war stays limited.56

There are similar risks of nuclear escalation in the event of a US-China conflict. China has traditionally possessed a relaxed nuclear posture with a small “lean and effective” deterrent and a formal “no first use” policy. But China is relying more on its strategic forces. It is projected to double—if not triple or quadruple—the size of its nuclear arsenal in the coming decade.57

Chinese experts have acknowledged there is a narrow range of contingencies in which China might use nuclear weapons first.58 As in the case of Russia, the US Nuclear Posture Review recognizes the possibility of limited Chinese nuclear attacks and also holds out the potential of a limited US reprisal with low-yield nuclear weapons as a deterrent.59 If the nuclear threshold is breached in a conflict between the United States and China, the risk of nuclear exchange is real.

In short, if a coming revolution in military affairs provides a real or perceived battlefield advantage for Russia or China, such a development raises the likelihood of armed aggression against US regional allies, major power war, and an increased risk of nuclear escalation.

#### U.S. hegemony loss risks global nuclear war

Dimitri K. Simes ’20, December 20, “Why America Needs a Foreign Policy Reset,” NATIONAL INTEREST, <https://nationalinterest.org/feature/why-america-needs-foreign-policy-reset-174684>

THE UNITED States today faces real geopolitical peril, and neither the Biden team nor the broader U.S. foreign policy establishment acknowledges the gravity of the situation. President-elect Joe Biden and his advisers like to speak not only of renewed American leadership, but also of a restoration of the liberal international order and the American ability to simultaneously act as a revolutionary power and be at peace. In fact, the danger of a nuclear confrontation is growing. This uncomfortable truth is rarely acknowledged, but not for a lack of warning. Rather, a new normal has emerged in American foreign policy debates where the dangerous implications of U.S. policies are downplayed so that the pursuit of American hegemony can continue unquestioned, without any meaningful congressional scrutiny or the kind of genuine political debate that existed during the Cold War. But in world politics, benign intentions do not assure impunity.

At the same time, the United States is confronted by emboldened and embittered adversaries such as China and Russia and handicapped by confused and uncertain alliances—starting with NATO—which seem to exist not so much as tools of U.S. foreign policy but as sacrosanct symbols of Western virtue. Beyond these unnecessary adversaries and uncertain alliances, there is also a growing fragmentation of world politics unparalleled since World War I. That fragmentation renders otiose the popular term “international community.” The United Nations acts far too often as a forum for international debates rather than as an effective regulating mechanism.

#### U.S. coop with allies maintains the lead on biotech – key to economic growth

**Carlson et al. ’21** -Managing director and writer for the Texas National Security Review (Rob, Chad Sbragia and Kate Sixt. “Beyone Biological Defense: Maintaining the U.S. Biotechnology Advantage”. *War on the Rocks,* Texas National Security Review, September 14, 2021, <https://warontherocks.com/2021/09/beyond-biological-defense-maintaining-the-u-s-biotechnology-advantage/)//zd>

From 2007 to 2008, tainted supplies of Chinese-manufactured heparin, a common blood thinner, led to 81 deaths across the United States. This should have been a wake-up call to the Department of Defense. Over the last two decades, biotechnology has become a key component of American supply chains, perhaps accounting for 20 percent of the chemicals the U.S. military uses. Those supply chains now span the globe and contain a significant amount of material produced in China. Remarkably, the full extent of the military’s dependence on Chinese biotechnology is unknown because the U.S. government is not assessing it. These dependencies extend beyond pharmaceuticals to fundamentals such as solvents and polymers. Just try and paint an aircraft without xylenes. If you’ve never thought about how difficult it would be, well that’s exactly the problem.

The Department of Defense has historically viewed biotechnology narrowly in relation to military medicine and biodefense. As a result, the vital role of biotechnology in military readiness and national security remains poorly understood. Biowarfare and bioterrorism are real risks, but approaching the nation’s biotechnology security needs only in these terms will leave the country ever more vulnerable.

BECOME A MEMBER

China, by contrast, has been integrating biotechnology into its strategic development and elevating biotechnology to a key component of national security. China’s military-civil fusion development strategy makes biotechnology a core priority for the People’s Liberation Army. This strategy has one goal: to bring together China’s civilian and military industrial bases in order to better project power. To that end, China has cornered supply chains in multiple sectors, including pharmaceuticals ingredients and other important chemicals.

Stephanie Rogers, the Defense Department’s acting principal director for biotechnology, recently declared that “the nation that leads the world in biotechnology will accrue enduring economic, societal, and defense gains.” Unfortunately, this awareness has yet to be reflected in government policy. Biotechnology security is national security — for the United States and for China. The Department of Defense should recognize biotechnology’s role as a foundational technology and make biotechnology development and supply chain security a priority.

Maintaining America’s Biotechnology Advantage

Biotechnology in the United States is a significant contributor to the economy. By one estimate, in 2017, U.S. biotechnology revenues exceeded $400 billion, or 2 percent of gross domestic product, substantially surpassing better-measured sectors such as mining. Bioeconomy revenues have grown at an average rate of 10 percent annually for two decades. Notably, U.S. biotechnology revenues alone were approximately equal to worldwide semiconductor revenues for 2017. Biotechnology now supplies critical medicines, and, as more than 90 percent of the corn and soy grown in the United States is genetically modified, biotechnology feeds the armed forces. Industrial biotechnology is responsible for upward of 20 percent of chemicals produced in the United States, suggesting a similar proportion of chemicals used in the military are also biologically derived. And these impressive figures may still be significant underestimates: Using a different methodology, the U.S. National Academy of Sciences recently concluded that the biotechnology industry contributes 5 to 7 percent of U.S. gross domestic product. Biotechnology, therefore, may already constitute an even larger share of the military supply chain.

As biotechnology continues to mature, its contribution to physical and economic security will become even more significant. Tools are now being deployed that enable the engineering and biomanufacturing of materials that will eventually not only displace petrochemicals but also surpass them in production scale and performance. Over the next ten to twenty years, biological production could soon supply up to 60 percent of physical inputs across the global economy, and biotechnology could have a “direct economic impact of up to $4 trillion a year.”

While the United States is arguably still leading in biotechnology, it risks losing this lead to China. In China, biotechnology is a national development and a security matter. China’s Innovation Driven Development Strategy emphasizes biotechnology’s essential role in the country’s economic development, while the Military-Civil Fusion Development Strategy seeks to ensure that biotechnology research is also oriented toward the country’s military and broader security goals. Chinese biotechnology revenues are reported to be of a similar size to those in the United States, although they are subject to even lesser clarity in reporting.

While China continues its licit and illicit acquisition efforts targeting the U.S. biotechnology sector, it is also shifting its attention to domestic innovation. In time, this will provide the People’s Liberation Army with new capabilities and increase both America’s and the Pentagon’s reliance on Chinese biotechnology products.

Recommendations

As early as 1958, the Department of Commerce was tracking the economic contribution of semiconductors, even though they made up less than 0.1 percent of the gross domestic product. Yet, today, the U.S. government has made no equivalent effort to track the much more significant role of biotechnology.

This illiteracy is a national security issue. American and Chinese bioeconomies are in competition, and Beijing asserts that it is investing with the intent to take, and to then maintain, the lead. To sustain America’s advantage, the U.S. Department of Defense should better understand its reliance on biotechnology and increase investment in it accordingly. The Pentagon’s recent investment in the BioIndustrial Manufacturing and Design Ecosystem is a notable step in the right direction. However, the seven-year budget for this project is approximately the cost of a single F-35A. For an investment that could impact the entire defense supply chain, this is inadequate.

We recommend the following plan of action for the Department of Defense to take its place alongside the Departments of Commerce and State in the broader interagency effort to secure America’s biotechnology advantage.

First, in close coordination with the Department of Commerce, the Department of Defense should make a systematic effort to better understand the role of biotechnology in the economy, supply chains, and manufacturing. This, in turn, should inform additional oversight and regulatory controls.

The responsibility to understand, prepare for, and respond to biotechnology threats is balkanized, spread across at least nine departments and agencies. Vulnerabilities in the bioeconomy will affect the Department of Defense in terms of readiness, soldier health, and the ability to fulfill missions. Addressing those vulnerabilities begins with a sustained, comprehensive effort to understand the role of biotechnology in industry today, as well as how that industry contributes to defense supply chains, and how military acquisition policy shapes biotechnology. To that end, the Pentagon should work with the Department of Commerce to create domestic reporting codes for biotechnology revenues and employment for the quarterly and annual economic census, and further incorporate those codes into the North American Industrial Classification System. Institutionalizing the gathering of these data is the first step toward sustainable policymaking and rational spending.

The Department of Commerce should then consider adding import/export controls on biotechnology, while avoiding overly broad restrictions that suffocate innovation. Protecting foundational technologies using the Foreign Investment Risk Review Modernization Act and Export Control Reform Act will be critical for securing biotechnology. However, biotechnology competition is not exclusive to commercial activities. The Pentagon should assess critical vulnerabilities and dependencies to assist the other agencies in bringing China’s foreign biotechnology access in line with standards in other major markets.

The Department of Defense has been asked to document and secure supply chains critical to defense applications and to the overall U.S. economy. This should also apply to biotechnology. Current Pentagon efforts to expand domestic biological manufacturing capabilities are an important start, but a broader effort is needed. An empowered deputy national security adviser could help oversee the relationship between the Pentagon and the National Economic Council to promote and secure the military’s broader technology needs.

Second, the Department of Defense should better study the accomplishments and intent of China, especially the Chinese military, in developing biotechnology as a strategic technology.

Once the Department of Defense better understands critical U.S. biotechnology dependencies on China, it can begin the work of reducing them. This requires an interagency examination to identify cross-cutting resources, develop mitigation strategies, formulate best practices to bolster innovation, and expand outreach to allies and partners to reduce systemic gaps China could exploit. Partnership with industry and allies will allow the U.S. government to understand and counter Beijing’s efforts to distort commercial activity in its favor.

To this end, the Department of Defense should mirror the National Security Council’s effort by creating an emerging technology portfolio within Office of the Under Secretary of Defense-Policy. While other technology offices in the Department of Defense are internally focused, an entity in this office that concentrates externally on foundational technology competition is required. Such an office may be able to address uncertainties in assessments of Chinese biotechnology revenues and capabilities.

Finally, in coordination with the Department of State, the Department of Defense should identify opportunities for dialogue with the People’s Liberation Army about biotechnology-related security issues.

It is time to include biotechnology in the dialogue mechanisms that compose bilateral U.S. defense relations with the People’s Liberation Army. This dialogue should prioritize the ethics of biotechnology in the context of future conflicts, the escalatory risks this technology creates, and the possibility of cooperation where the interests of the two nations intersect. Both sides should work toward a common understanding related to ethics, policies, and standards when operationalizing biotechnology. This will help avoid miscalculation and promote strategic stability.

Unlike the U.S. government, Chinese leadership has a carefully considered position on the importance of biosafety and “biological problems” in national security. While these problems are understood to encompass traditional weapons concerns, they also extend to the health of the entire natural world in the context of ever-expanding applications of biotechnology. This position might provide an opportunity for constructive engagement at a time when tensions are rising.

Conclusion

The Pentagon needs to expand its approach to biotechnology beyond biodefense. If China maintains biological warfare aspirations, by all means address those. But defense planners should also address China’s broader approach to biotechnology and its integrated approach to civil-military fusion.

Securing biotechnology secures the nation. Maintaining the U.S. lead in biotechnology is critical to the nation’s economic and military resilience in war, peace, and the gray zone short of conflict. This requires better biotechnology collaboration — within the U.S. government, with allies and partners, and even, where possible, with competitors.

#### U.S. growth key to global growth

Kose et al, ‘17, March. M. Ayhan Kose; Lakatos, Csilla; Ohnsorge, Franziska; Stocker, Marc (2017) : The global role of the U.S. economy: Linkages, policies and spillovers, Working Paper, No. 1706, Koç University-TÜSİAD Economic Research Forum (ERF), Istanbul, “The global role of the U.S. economy: Linkages, policies and spillovers,” Working Paper, No. 1706, https://www.econstor.eu/bitstream/10419/166746/1/884608719.pdf

Developments in the U.S. economy, because of its size and international linkages, are bound to have substantial implications for the global economy. The United States is the world’s single largest economy (at market exchange rates), accounting for almost 22 percent of global output and over a third of stock market capitalization. It is prominent in virtually every global market, accounting for about one-tenth of global trade flows, one-fifth of global FDI stock, close to one-fifth of remittances, and one-fifth of global energy demand. Since the U.S. dollar is the most widely used currency in global trade and financial transactions, changes in U.S. monetary policy and investor sentiment play a major role in driving global financing conditions.

#### Downturn sparks major power war

Sundaram and Popov ‘19 (Jomo Kwame, former economics professor, was United Nations Assistant Secretary-General for Economic Development, and received the Wassily Leontief Prize for Advancing the Frontiers of Economic Thought, and Vladimir, former senior economics researcher in the Soviet Union, Russia and the United Nations Secretariat, is now Research Director at the Dialogue of Civilizations Research Institute in Berlin, “Economic Crisis Can Trigger World War”, Inter Press Service, February, <http://www.ipsnews.net/2019/02/economic-crisis-can-trigger-world-war/>)

KUALA LUMPUR and BERLIN, Feb 12 2019 (IPS) - Economic recovery efforts since the 2008-2009 global financial crisis have mainly depended on unconventional monetary policies. As fears rise of yet another international financial crisis, there are growing concerns about the increased possibility of large-scale military conflict. More worryingly, in the current political landscape, prolonged economic crisis, combined with rising economic inequality, chauvinistic ethno-populism as well as aggressive jingoist rhetoric, including threats, could easily spin out of control and ‘morph’ into military conflict, and worse, world war. Crisis responses limited The 2008-2009 global financial crisis almost ‘bankrupted’ governments and caused systemic collapse. Policymakers managed to pull the world economy from the brink, but soon switched from counter-cyclical fiscal efforts to unconventional monetary measures, primarily ‘quantitative easing’ and very low, if not negative real interest rates. But while these monetary interventions averted realization of the worst fears at the time by turning the US economy around, they did little to address underlying economic weaknesses, largely due to the ascendance of finance in recent decades at the expense of the real economy. Since then, despite promising to do so, policymakers have not seriously pursued, let alone achieved, such needed reforms. Instead, ostensible structural reformers have taken advantage of the crisis to pursue largely irrelevant efforts to further ‘casualize’ labour markets. This lack of structural reform has meant that the unprecedented liquidity central banks injected into economies has not been well allocated to stimulate resurgence of the real economy. From bust to bubble Instead, easy credit raised asset prices to levels even higher than those prevailing before 2008. US house prices are now 8% more than at the peak of the property bubble in 2006, while its price-to-earnings ratio in late 2018 was even higher than in 2008 and in 1929, when the Wall Street Crash precipitated the Great Depression. As monetary tightening checks asset price bubbles, another economic crisis — possibly more severe than the last, as the economy has become less responsive to such blunt monetary interventions — is considered likely. A decade of such unconventional monetary policies, with very low interest rates, has greatly depleted their ability to revive the economy. The implications beyond the economy of such developments and policy responses are already being seen. Prolonged economic distress has worsened public antipathy towards the culturally alien — not only abroad, but also within. Thus, another round of economic stress is deemed likely to foment unrest, conflict, even war as it is blamed on the foreign. International trade shrank by two-thirds within half a decade after the US passed the Smoot-Hawley Tariff Act in 1930, at the start of the Great Depression, ostensibly to protect American workers and farmers from foreign competition! Liberalization’s discontents Rising economic insecurity, inequalities and deprivation are expected to strengthen ethno-populist and jingoistic nationalist sentiments, and increase social tensions and turmoil, especially among the growing precariat and others who feel vulnerable or threatened. Thus, ethno-populist inspired chauvinistic nationalism may exacerbate tensions, leading to conflicts and tensions among countries, as in the 1930s. Opportunistic leaders have been blaming such misfortunes on outsiders and may seek to reverse policies associated with the perceived causes, such as ‘globalist’ economic liberalization. Policies which successfully check such problems may reduce social tensions, as well as the likelihood of social turmoil and conflict, including among countries. However, these may also inadvertently exacerbate problems. The recent spread of anti-globalization sentiment appears correlated to slow, if not negative per capita income growth and increased economic inequality. To be sure, globalization and liberalization are statistically associated with growing economic inequality and rising ethno-populism. Declining real incomes and growing economic insecurity have apparently strengthened ethno-populism and nationalistic chauvinism, threatening economic liberalization itself, both within and among countries. Insecurity, populism, conflict Thomas Piketty has argued that a sudden increase in income inequality is often followed by a great crisis. Although causality is difficult to prove, with wealth and income inequality now at historical highs, this should give cause for concern. Of course, other factors also contribute to or exacerbate civil and international tensions, with some due to policies intended for other purposes. Nevertheless, even if unintended, such developments could inadvertently catalyse future crises and conflicts. Publics often have good reason to be restless, if not angry, but the emotional appeals of ethno-populism and jingoistic nationalism are leading to chauvinistic policy measures which only make things worse. At the international level, despite the world’s unprecedented and still growing interconnectedness, multilateralism is increasingly being eschewed as the US increasingly resorts to unilateral, sovereigntist policies without bothering to even build coalitions with its usual allies. Avoiding Thucydides’ iceberg Thus, protracted economic distress, economic conflicts or another financial crisis could lead to military confrontation by the protagonists, even if unintended. Less than a decade after the Great Depression started, the Second World War had begun as the Axis powers challenged the earlier entrenched colonial powers. They patently ignored Thucydides’ warning, in chronicling the Peloponnesian wars over two millennia before, when the rise of Athens threatened the established dominance of Sparta! Anticipating and addressing such possibilities may well serve to help avoid otherwise imminent disasters by undertaking pre-emptive collective action, as difficult as that may be. The international community has no excuse for being like the owners and captain of the Titanic, conceitedly convinced that no iceberg could possibly sink the great ship.

### 1AC Advantage – Democracy

#### U.S. security cooperation with NATO is key to broader leadership in Europe – solo European action causes divergence and diplomatic disengagement

James B. Steinberg ‘3, “An Elective Partnership: Salvaging Transatlantic Relations,” BROOKINGS, https://www.brookings.edu/wp-content/uploads/2016/06/steinberg20030601.pdf

Finally, they note that NATO has been the predicate for US on-going involvement in European security affairs and that diminishing NATO’s role as the preferred forum for US–European security cooperation will inevitably lead to US disengagement from Europe. Those who argue for a new approach see the flip side to each of those arguments. First, they note that NATO has played a limited role in nonEuropean security issues, particularly those with a political dimension. Second, they argue that the evolution of the EU – in particular, its efforts to develop common foreign, security and defence policies – requires the EU member states increasingly to develop common positions among themselves. A larger forum of 19 (and rather soon, 26) member states not only fails to reflect this EU evolution, but tends to undermine European integration in the security realm. Third, they argue that the expansion of NATO and its ancillary bodies dilute the core US–European cooperation through the involvement of peripheral countries, such as states in the Caucasus and Central Asia, that share neither our values nor our interests. On the question of military effectiveness, they point to the lengthy and ultimately successful discussions that arrived at a blueprint – the so-called ‘Berlin Plus’ arrangements – for assuring that military cooperation can take place across the NATO–EU boundary. Finally, they insist that new US–EU links can provide an alternative basis for US engagement in Europe.

There is no unambiguously right conclusion to this debate. But the weight of argument would appear to favour retaining a core role for NATO, suitably rebalanced to meet the new missions and the new political realities of European integration. The agreements reached at the Prague Summit indicate a recognition on both sides of the Atlantic of the continuing importance of transatlantic security cooperation, based on the participation of each sovereign government, not two blocs (the European Union and United States). This perspective is reinforced by the largely overlapping processes of NATO and EU enlargement.15 Moreover, most new EU members are more ‘transatlantic’ in orientation than many of the older members.

So long as the security dimension of the EU remains intergovernmental and largely based on consensus rather than majority voting, there is no deep tension between the NATO format and the EU’s own processes. Moreover, the established military dimensions of cooperation would be difficult to replicate without NATO. Conversely, a diminished reliance on NATO as an institution, particularly in dealing with global security challenges, would push the United States more and more toward the strategy of ‘coalitions of the willing’, diminishing Europe’s influence and enhancing the chances that the United States and Europe would take divergent approaches, to the detriment of both.

#### Leadership in Europe prevents democratic backsliding

Robert Kagan and Ivo H. Daalder ‘16, Monday, April 25, Robert Kagan Stephen & Barbara Friedman Senior Fellow - Foreign Policy, Center for Security, Strategy, and Technology, Project on International Order and Strategy Ivo H. Daalder, President, Chicago Council on Global Affairs Ivo H. Daalder Former Brookings Expert President - Chicago Council on Global Affairs Former U.S. Ambassador to NATO. “The U.S. can’t afford to end its global leadership role,” BROOKINGS, <https://www.brookings.edu/blog/order-from-chaos/2016/04/25/the-u-s-cant-afford-to-end-its-global-leadership-role/>

The economic, political and security strategy that the United States has pursued for more than seven decades, under Democratic and Republican administrations alike, is today widely questioned by large segments of the American public and is under attack by leading political candidates in both parties. Many Americans no longer seem to value the liberal international order that the United States created after World War II and sustained throughout the Cold War and beyond. Or perhaps they take it for granted and have lost sight of the essential role the United States plays in supporting the international environment from which they benefit greatly. The unprecedented prosperity made possible by free and open markets and thriving international trade; the spread of democracy; and the avoidance of major conflict among great powers: All these remarkable accomplishments have depended on sustained U.S. engagement around the world. Yet politicians in both parties dangle before the public the vision of an America freed from the burdens of leadership.

What these politicians don’t say, perhaps because they don’t understand it themselves, is that the price of ending our engagement would far outweigh its costs. The international order created by the United States today faces challenges greater than at any time since the height of the Cold War. Rising authoritarian powers in Asia and Europe threaten to undermine the security structures that have kept the peace since World War II. Russia invaded Ukraine and has seized some of its territory. In East Asia, an increasingly aggressive China seeks to control the sea lanes through which a large share of global commerce flows. In the Middle East, Iran pursues hegemony by supporting Hezbollah and Hamas and the bloody tyranny in Syria. The Islamic State controls more territory than any terrorist group in history, brutally imposing its extreme vision of Islam and striking at targets throughout the Middle East, North Africa and Europe. None of these threats will simply go away. Nor will the United States be spared if the international order collapses, as it did twice in the 20th century. In the 21st century, oceans provide no security. Nor do walls along borders. Nor would cutting off the United States from the international economy by trashing trade agreements and erecting barriers to commerce.

Instead of following the irresponsible counsel of demagogues, we need to restore a bipartisan foreign policy consensus around renewing U.S. global leadership. Despite predictions of a “post-American world,” U.S. capacities remain considerable. The U.S. economy remains the most dynamic in the world. The widely touted “rise of the rest”—the idea that the United States was being overtaken by the economies of Brazil, Russia, India and China—has proved to be a myth. The dollar remains the world’s reserve currency, and people across the globe seek U.S. investment and entrepreneurial skills to help their flagging economies. U.S. institutions of higher learning remain the world’s best and attract students from every corner of the globe. The political values that the United States stands for remain potent forces for change. Even at a time of resurgent autocracy, popular demands for greater freedom can be heard in Russia, China, Iran and elsewhere, and those peoples look to the United States for support, both moral and material. And our strategic position remains strong. The United States has more than 50 allies and partners around the world. Russia and China between them have no more than a handful.

The task ahead is to play on these strengths and provide the kind of leadership that many around the world seek and that the American public can support. For the past two years, under the auspices of the World Economic Forum, we have worked with a diverse, bipartisan group of Americans and representatives from other countries to put together the broad outlines of a strategy for renewed U.S. leadership. There is nothing magical about our proposals. The strategies to sustain the present international order are much the same as the strategies that created it. But they need to be adapted and updated to meet new challenges and take advantage of new opportunities.

For instance, one prime task today is to strengthen the international economy, from which the American people derive so many benefits. This means passing trade agreements that strengthen ties between the United States and the vast economies of East Asia and Europe. Contrary to what demagogues in both parties claim, ordinary Americans stand to gain significantly from the recently negotiated Trans-Pacific Partnership. According to the Peterson Institute for International Economics, the agreement will increase annual real incomes in the United States by $131 billion. The United States also needs to work to reform existing international institutions, such as the International Monetary Fund, so that rising economic powers such as China feel a greater stake in them, while also working with new institutions such as the Asian Infrastructure Investment Bank to ensure that they reinforce rather than undermine liberal economic norms.

The revolution in energy, which has made the United States one of the world’s leading suppliers, offers another powerful advantage. With the right mix of policies, the United States could help allies in Europe and Asia diversify their sources of supply and thus reduce their vulnerability to Russian manipulation. Nations such as Russia and Iran that rely heavily on hydrocarbon exports would be weakened, as would the OPEC oil cartel. The overall result would be a relative increase in our power and ability to sustain the order.

#### NATO is the key actor to protect democracy

Ashley Parker, Marianna Sotomayor and Isaac Stanley-Becker April 29, 2022, “Inside the Republican drift away from supporting the NATO alliance,” THE WASHINGTON POST, https://www.washingtonpost.com/politics/2022/04/29/nato-republicans-trump/

“We’re certainly going to have a lot of these talks with my colleagues, particularly next cycle, if there’s any assault on NATO that is launched,” Fitzpatrick said. “I will tell you that NATO needs to be reformed significantly. But it is absolutely critical that it be maintained because without NATO, dictators are going to, it’s going to be the Wild West internationally.”

Tommy Vietor, a National Security Council spokesman under Democratic President Barack Obama, said: “It’s a pretty shocking turn.”

“There’s an appropriate and important conversation to be had about the history of NATO expansion and whether it was well-thought-through,” said Vietor, now a co-host of “Pod Save America.” “But you didn’t see people in either party really fundamentally questioning the value of the alliance.”

#### Backsliding undermines the global liberal order, risking a laundry list of global threats including war, pandemics, and climate change

Andrea Kendall-Taylor ’16, July 15, a deputy national intelligence officer for Russia and Eurasia at the National Intelligence Council and a nonresident senior associate in the Human Rights Initiative at the Center for Strategic and International Studies in Washington, D.C.. “How Democracy’s Decline Would Undermine the International Order,” CSIS, https://www.csis.org/analysis/how-democracy’s-decline-would-undermine-international-order

It is rare that policymakers, analysts, and academics agree. But there is an emerging consensus in the world of foreign policy: threats to the stability of the current international order are rising. The norms, values, laws, and institutions that have undergirded the international system and governed relationships between nations are being gradually dismantled. The most discussed sources of this pressure are the ascent of China and other non-Western countries, Russia’s assertive foreign policy, and the diffusion of power from traditional nation-states to nonstate actors, such as nongovernmental organizations, multinational corporations, and technology-empowered individuals. Largely missing from these discussions, however, is the specter of widespread democratic decline. Rising challenges to democratic governance across the globe are a major strain on the international system, but they receive far less attention in discussions of the shifting world order.

In the 70 years since the end of World War II, the United States has fostered a global order dominated by states that are liberal, capitalist, and democratic. The United States has promoted the spread of democracy to strengthen global norms and rules that constitute the foundation of our current international system. However, despite the steady rise of democracy since the end of the Cold War, over the last 10 years we have seen dramatic reversals in respect for democratic principles across the globe. A 2015 Freedom House report stated that the “acceptance of democracy as the world’s dominant form of government—and of an international system built on democratic ideals—is under greater threat than at any point in the last 25 years.”

Although the number of democracies in the world is at an all-time high, there are a number of key trends that are working to undermine democracy. The rollback of democracy in a few influential states or even in a number of less consequential ones would almost certainly accelerate meaningful changes in today’s global order.

Democratic decline would weaken U.S. partnerships and erode an important foundation for U.S. cooperation abroad. Research demonstrates that domestic politics are a key determinant of the international behavior of states. In particular, democracies are more likely to form alliances and cooperate more fully with other democracies than with autocracies. Similarly, authoritarian countries have established mechanisms for cooperation and sharing of “worst practices.” An increase in authoritarian countries, then, would provide a broader platform for coordination that could enable these countries to overcome their divergent histories, values, and interests—factors that are frequently cited as obstacles to the formation of a cohesive challenge to the U.S.-led international system.

Recent examples support the empirical data. Democratic backsliding in Hungary and the hardening of Egypt’s autocracy under Abdel Fattah el-Sisi have led to enhanced relations between these countries and Russia. Likewise, democratic decline in Bangladesh has led Sheikh Hasina Wazed and her ruling Awami League to seek closer relations with China and Russia, in part to mitigate Western pressure and bolster the regime’s domestic standing.

Although none of these burgeoning relationships has developed into a highly unified partnership, democratic backsliding in these countries has provided a basis for cooperation where it did not previously exist. And while the United States certainly finds common cause with authoritarian partners on specific issues, the depth and reliability of such cooperation is limited. Consequently, further democratic decline could seriously compromise the United States’ ability to form the kinds of deep partnerships that will be required to confront today’s increasingly complex challenges. Global issues such as climate change, migration, and violent extremism demand the coordination and cooperation that democratic backsliding would put in peril. Put simply, the United States is a less effective and influential actor if it loses its ability to rely on its partnerships with other democratic nations.

A slide toward authoritarianism could also challenge the current global order by diluting U.S. influence in critical international institutions, including the United Nations , the World Bank, and the International Monetary Fund (IMF). Democratic decline would weaken Western efforts within these institutions to advance issues such as Internet freedom and the responsibility to protect. In the case of Internet governance, for example, Western democracies support an open, largely private, global Internet. Autocracies, in contrast, promote state control over the Internet, including laws and other mechanisms that facilitate their ability to censor and persecute dissidents. Already many autocracies, including Belarus, China, Iran, and Zimbabwe, have coalesced in the “Likeminded Group of Developing Countries” within the United Nations to advocate their interests.

Within the IMF and World Bank, autocracies—along with other developing nations—seek to water down conditionality or the reforms that lenders require in exchange for financial support. If successful, diminished conditionality would enfeeble an important incentive for governance reforms. In a more extreme scenario, the rising influence of autocracies could enable these countries to bypass the IMF and World Bank all together. For example, the Chinese-created Asian Infrastructure and Investment Bank and the BRICS Bank—which includes Russia, China, and an increasingly authoritarian South Africa—provide countries with the potential to bypass existing global financial institutions when it suits their interests. Authoritarian-led alternatives pose the risk that global economic governance will become fragmented and less effective.

Violence and instability would also likely increase if more democracies give way to autocracy. International relations literature tells us that democracies are less likely to fight wars against other democracies, suggesting that interstate wars would rise as the number of democracies declines. Moreover, within countries that are already autocratic, additional movement away from democracy, or an “authoritarian hardening,” would increase global instability. Highly repressive autocracies are the most likely to experience state failure, as was the case in the Central African Republic, Libya, Somalia, Syria, and Yemen. In this way, democratic decline would significantly strain the international order because rising levels of instability would exceed the West’s ability to respond to the tremendous costs of peacekeeping, humanitarian assistance, and refugee flows.

#### Climate change causes extinction

* Turns: war
* Disease
* Coop
* Environment

David Spratt and Ian T. Dunlop ’19, May. Research Director for Breakthrough National Centre for Climate Restoration, Melbourne; member of the Club of Rome. Formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, chief executive of the Australian Institute of Company Directors, and chair of the Australian Greenhouse Office Experts Group on Emissions Trading 1998-2000, “Existential climate-related security risk: A scenario approach”, Breakthrough Policy Paper, <https://docs.wixstatic.com/ugd/148cb0_a1406e0143ac4c469196d3003bc1e687.pdf>

Even for 2°C of warming, more than a billion people may need to be relocated and In high-end scenarios, the scale of destruction is beyond our capacity to model, with a high likelihood of human civilisation coming to an end. 21 National security consequences: For pragmatic reasons associated with providing only a sketch of this scenario, we take the conclusion of the Age of Consequences ‘Severe’ 3°C scenario developed by a group of senior US national-security figures in 2007 as appropriate for our scenario too: Massive nonlinear events in the global environment give rise to massive nonlinear societal events. In this scenario, nations around the world will be overwhelmed by the scale of change and pernicious challenges, such as pandemic disease. The internal cohesion of nations will be under great stress, including in the United States, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability. The flooding of coastal communities around the world, especially in the Netherlands, the United States, South Asia, and China, has the potential to challenge regional and even national identities. Armed conflict between nations over resources, such as the Nile and its tributaries, is likely and nuclear war is possible. The social consequences range from increased religious fervor to outright chaos. In this scenario, climate change provokes a permanent shift in the relationship of humankind to nature’. (emphasis added)

### 1AC Plan

#### The United States federal government should substantially increase its security cooperation over biotechnology with the North Atlantic Treaty Organization.

### 1AC Solvency

#### U.S.-NATO cooperation is the only platform for evolving a new security framework that incorporates biotech

**Association of the U.S. Army ’21** (“Cooperation, Readiness Critical to U.S., NATO Alliance”, AUSA, <https://www.ausa.org/news/cooperation-readiness-critical-us-nato-alliance>, Accessed 6/27/22; Analina)

The U.S. and NATO must continue to strengthen its partnership as the world enters a “period of potential instability,” America’s top uniformed leader said.

“In my view, the world is entering a period of potential instability as some nations ... and clearly terrorist groups and perhaps some rogue actors are seeking to undermine and challenge the existing international order,” Joint Chiefs Chairman Gen. Mark Milley said. “And they seek to weaken the system of cooperation and collective security that has been in existence for some time.”

Speaking July 15 in a ceremony aboard the USS Kearsarge to celebrate NATO’s newest operational headquarters, Joint Force Command Norfolk in Virginia, Milley emphasized NATO’s role in maintaining security and called it “the most successful military alliance in human history.”

“NATO is still very much a vital and critical part of our regional security framework and indeed our global security framework,” Milley. “In fact, in my view, it's the linchpin that holds together the period of great power peace that we are now enjoying.”

Milley also stressed the importance of maintaining readiness and modernizing for the future, calling them keys to ensuring the U.S. can meet future defense challenges.

“We have to maintain the readiness of the present, we have to modernize for the future,” Milley said. “We are ready right now. Those who think we are not are mistaken, and any adversary that seeks to challenge the United States military resolve will do well to respect this military and our alliance and NATO.”

In particular, Milley stressed that the incorporation of new technology will play a vital role in the military’s readiness capabilities over the next decade and said that technology, like precision munitions, artificial intelligence and biotechnology, will “have a fundamental impact on the conduct of war.”

Should the U.S. military not lean into technological advances, Milley gave a grim warning.

“There's a whole set of technologies that are driving fundamental change, and if we, the United States military, and we, NATO as an alliance, do not adapt and adopt these technologies, if we don't … put the pedal to the metal and do this right over the next 10 or 15 years, we are condemning a future generation to what happened 76 years ago.”

Moving forward, Milley emphasized that continued cooperation will be a key part of maintaining U.S. readiness, adding, “We as an alliance are stronger together than we are individually.”

“We're going to succeed or fail as a nation with our allies and partners, because the United States does not fight wars alone,” Milley said.

#### NATO says yes – they want to invest in military biotech

Gotkowska, coordinates Regional Centre Programme at OSW, ’21 (Justyna Gotkowska, “NATO 2030: towards a new strategy”, <http://aei.pitt.edu/103793/1/Commentary_398.pdf>, Accessed 6-25-22; Analina)

The backdrop to the Brussels summit was the Alliance’s 70th anniversary meeting in London in December 2019, which showed that the organisation was faced with a wide range of problems. In 2019, the debate was dominated by different perceptions of threats and challenges, a lack of political consultation on key issues, debate over the size of defence budgets, and the relationship with Donald Trump, which from the perspective of the Western European members was difficult. At that time, the allies decided to initiate a reflection process under the leadership of the NATO Secretary General1 Jens Stoltenberg; he set up a group of experts who issued a report entitled United for a New Era2 in November 2020. Taking the report’s proposals as well as his own conclusions into consideration, and after consultation with the member states, Stoltenberg presented his proposals for the NATO 2030 agenda,3 which the allies accepted during the Brussels summit. This document will most likely set the direction for a new NATO Strategic Concept, to be adopted in 2022, that will replace the now outdated 2010 strategy. The starting point of the NATO 2030 agenda is the belief that the Alliance is once again at a turning point in its history where it must adapt to a changing world – not only to confront Russia’s continued aggressive policy, but also to find answers to the challenges posed by the rise of China. The allies thus agreed that they should first of all intensify their political consultations. NATO is to become a platform for extended political dialogue. In strategic terms, the organisation is primarily betting on deterrence and defence. In view of the growing uncertainty in international relations, the allies agreed to fulfil the financial commitments made in 2014 to spend 2% of their GDP on defence and 20% of their annual defence budgets on new arms and military equipment. NATO will also ideally refrain from conducting any major crisis response operations during the current decade. This is symbolised by the planned withdrawal of NATO forces from Afghanistan and the end of the largest out-of-area ‘Resolute Support’ operation, following the US decision to withdraw its troops from that country. However, NATO will continue to engage in training and capacity building in partner countries in the wider European neighbourhood.

NATO wants to play a larger role in improving the resilience of its member states, investing in emerging and disruptive technologies in defence, adapting to climate change, and upholding the rules-based international order. On the first of these issues, in 2016 the allies decided to adopt seven baseline requirements for national resilience with regard to the following areas: continuity of government and critical government services; the ability to deal effectively with uncontrolled movements of people; the ability to deal with mass casualties; ensuring the resilience of energy supplies; of food and water resources; of civil communications systems; and of transport systems.4 At the Brussels summit they made a strengthened commitment to resilience, extending the areas above to include the diversification of supply chains, as well as the resilience of critical infrastructure (on land, at sea, in space and in cyberspace) and key industries.5 The development of emerging and disruptive technologies is to be facilitated by the planned creation of a civil-military Defence Innovation Accelerator (DIANA) and a multinationally-funded NATO Innovation Fund to invest in start-ups working on dual-use and emerging & disruptive technologies. NATO wants to invest in the following areas: artificial intelligence, data and computing, autonomy, quantum-enabled technologies, biotechnology and human enhancements, hypersonic technologies, and space.6 The allies have also adopted a Climate Change and Security Action Plan. NATO wants to analyse the impact of climate change on the security environment, and on allied installations, missions and operations; adapt accordingly, and contribute to the mitigation of climate change by reducing greenhouse gas emissions from the military.

#### Security cooperation is key to durable solvency – NATO won’t say yes to substitutions

**Cooper 21-** Senior fellow with the Atlantic Council and former assistant secretary at the Department of State (R. Clarke. “American security cooperation needs an ‘integrity check’”. *Atlantic Council,* September 24, 2021, https://www.atlanticcouncil.org/blogs/new-atlanticist/american-security-cooperation-needs-an-integrity-check/)//zd

Now, treaty allies and partner nations are reassessing their bilateral security relationships with the United States. It’s not just the NATO states caught off-guard by the haphazard departure from Afghanistan that will think twice before embarking upon future military campaigns with the United States. Resolute defense partners in the Middle East and the Indo-Pacific—including Saudi Arabia, Jordan, Qatar, Japan, South Korea, and Taiwan—likely also need overt reassurance, such as a clear national-security strategy and declared recommitments.

Additionally, these partners are increasingly feeling the need to proactively raise their own defense capabilities by boosting their budgets or coordinating with allies to ensure regional security along with the United States.

Besides stress-testing the integrity of American security cooperation, the Afghanistan withdrawal also highlights the necessity of staying the course on long-term investment in mutually beneficial security partnerships with countries with which the United States has shared interests—or shared threats. Well before the fall of Afghanistan, foreign partners were already questioning the reliability of the United States at a time when the debate in Washington about our global posture was becoming increasingly politicized.

The case for partnering with the United States needs to be clearly articulated through the presence, performance, and processes of American security cooperation. The quality of US aerospace and defense equipment, the commitment to build capabilities, and the reassurance that comes from partnering with the US military must include further transparency, accountability, and predictability of policies.

If not, American allies and partners will be hesitant to collaborate with us on future shared security requirements—or simply seek cooperation elsewhere.

We owe it to our fellow Americans, as well as to allies and partners, to be candid about the costs of security and what it takes to support our shared values of the rule of law, civil society, and human rights. As we await the outcome of the Global Posture Review, or a revised Conventional Arms Transfer Policy, anti-democratic adversaries in Beijing and Moscow are aggressively exploiting each disruption associated with the Taliban takeover in Kabul.

If alliances are indeed our “greatest asset”—whether in the Middle East, Indo-Pacific, Africa, or Europe—it is crucial for US officials to actively affirm their values through clear recommitments and presence in security cooperation, such as the recent pledges made to Israeli Prime Minister Naftali Bennett and Ukrainian President Volodymyr Zelenskyy.

We would be naïve to believe that countries around the world have no choice but to partner with the United States. Washington must be deliberate in its efforts to prove why choosing the United States as a security partner remains the best option.

#### Their DA is not unique – U.S. is doing biotech already, top DOD priority

**Du ‘21-** Author for the National Defense Magazine (Eric. “Keeping Chinese Funding out of U.S. Biotech”. *National Defense Magazine,* November 17, 2021, https://www.nationaldefensemagazine.org/articles/2021/11/17/keeping-chinese-funding-out-of--us-biotech)//zd

Biotechnology is one of the Defense Department’s top modernization priorities, and it is often considered to be the industry of the future.

Likewise, China is aggressively competing for primacy in this sector by pouring more than $100 billion into its domestic enterprises and foreign investments. In Beijing’s “Military-Civil Fusion Strategy,” the People’s Liberation Army has the lead role in exploiting and weaponizing biotechnology for its offensive capabilities, including “specific ethnic genetic attacks.”

How can the U.S. government maintain biotechnological preeminence and leverage the world’s most innovative private sector? Operation Warp Speed may provide a clue. It mobilized national biotech resources to rapidly acquire and deploy COVID-19 vaccines. Its success can be attributed to many factors.

One that needs special attention is the expanded use of other transaction authority acquisition agreements. About 80 percent of Operation Warp Speed’s funding was obligated through OTAs, with the rest using more traditional Federal Acquisition Regulations-based contracts.

Are OTAs the best way for the department to acquire biotech capabilities compared to traditional acquisition pathways? The short answer is, “yes — for now.” However, there are more strategic policy tools that need to be implemented for full benefit.

What exactly is the other transaction authority? OTA is an authority given to the government in 10 USC 2371b to carry out certain research, prototype and production projects. They are neither contracts, grants, nor cooperative agreements, and they are not subject to many rules prescribed under FAR. OTAs allow the government to incorporate more flexible and business-oriented terms that can reflect the commercial world’s best practices, which theoretically should make these programs more agile and efficient compared to traditional acquisitions.

Though originated in the 1950s, the use of OTA has only started to increase since the passage of the 2015 National Defense Authorization Act, which permanentized the Defense Department’s other transaction authority, and modified the definition of nontraditional defense contractor.

A major advantage of OTA is that it encourages the department to work with nontraditional defense contractors. That includes most of the companies in emerging technology sectors, such as biotech. OTAs also allow for non-competitive, follow-on production contracts with the department.

One major challenge the commercial industry has with the government during the acquisition process is the ownership of intellectual property and various rights for the government to march in and intervene, as granted in the Bayh-Dole Act. OTAs often address it by eliminating or reducing provisions of Bayh-Dole, thus incentivizing companies to make high-risk ventures with the Defense Department.

In fiscal year 2019, OTAs accounted for 18 percent of the department’s total research-and-development portfolio, a stark increase from 3 percent in 2015. In dollar amount, OTA obligations increased from $0.7 billion to $7.4 billion, a 712 percent increase. According to a Center for Strategic and International Studies analysis, 63 percent of defense OTA obligations went toward “advanced component development and prototypes” — a phase to evaluate integrated technologies, representative models, or prototype systems in high fidelity and realistic operating environments — akin to Phase 1 and 2 clinical trials in the biotech realm.

In the first half of fiscal year 2020 when Operation Warp Speed had taken full effect, the dollar amount of OTAs was roughly 1.6 times the combined amount of OTAs from 2015-2019.

The pandemic helped bring the U.S. government’s attention to biotech. A notable example of OTA in biotech is Gilead Science’s remdesivir — now branded Veklury — an antiviral medication for COVID-19 treatment. The drug development program had started out in the early 2000s with the intention to treat Hepatitis C. In 2016, the Army and Gilead signed a prototyping OTA to evaluate remdesivir’s efficacy against Ebola, and the Army would contribute up to $50 million to support animal testing.

# Advantage areas

### Bioterror solvency

#### U.S. and NATO allies need to take up biotech to preserve global balance in the face of hostile states or terrorists

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Emerging innovations within today’s most cutting-edge science and technology (S&T) areas are cited as carrying the potential to revolutionize governmental structures, economies, and life as we know it; others have argued that such technologies will yield doomsday scenarios and that military applications of such technologies have even greater potential than nuclear weapons to radically change the balance of power.2 Those S&T areas include artificial intelligence and robotics; hypersonics; additive manufacturing (aka 3D printing); meta-materials (nanotechnological materials that enable stealth/invisibility across multiple parts of the spectrum); directed energy weapons; energy generation, storage, and transmissions; the cognitive neurotechnologies (for brain-computer interface); biotechnology, including systems biology; and the intersection of each with information and communications technologies (ICTs).

When NATO conducted its first strategic review since the dissolution of the Soviet Union, almost a decade ago, it observed:

Less predictable is the possibility that research breakthroughs will transform the technological battlefield. Allies and partners should be alert for potentially disruptive developments in such dynamic areas as information and communications technology, cognitive and biological sciences, robotics, and nanotechnology [emphasis added]…The most destructive periods of history tend to be those when the means of aggression have gained the upper hand in the art of waging war.3

That passage conceptually highlights the uncertainty, complexity, and issues of interdependence that exist in trying to understand the interactions between emerging technologies and international security. Predicting how these new innovations and breakthroughs in scientific understanding may be used is a challenge. Looking to history is one valuable past insight. One must be careful, however, to not be purely technologically deterministic. That is to not assume that because something is possible, or because something potentially may come about, that it is inevitable. History shows us that human ingenuity and use is more often a function of political decisions, regional security threats, and other factors of social, political, historical, economic, and cultural origin.

While the suggestion that such emerging technologies will enable a new class of weapons that will alter the geopolitical landscape—including questions of challenging or changing strategic stability—remains to be realized, a number of unresolved security puzzles underlying the emergence of these new technology areas have implications for U.S. national security, defense policy, foreign policy, governance, and arms control regimes. The extent to which these emerging technologies may exacerbate or mitigate the global security and governance challenges that Russia currently poses and will pose in the future to the United States and NATO allies will be examined.

As the United States looks to the future—whether dominated by extremist groups co-opting advanced weapons in the world of globalized non-state actors or states engaged in persistent regional conflicts in areas of strategic interest—new adversaries and new science and technology will emerge. Choices made today that affect science and technology will impact how ably the United States can and will respond. The changing strategic environment in which security operations are planned and conducted impacts S&T policy choices made today and affects how S&T may play a beneficial or deleterious role in the future. Some game-changing technologies have received global attention, while others may be less well known; these new technologies and discoveries may significantly alter military capabilities and may generate new threats against military and civilian sectors.

Future trend analysis is a tricky task. Colin Gray said, “Trend spotting is easy. It is the guessing as to the probable meaning and especially the consequences of trends that is the real challenge.”4 How, when, where, and in what form the shifting nature of technological progress may bring enhanced or entirely new capabilities, many of which are no longer the exclusive domain of the United States, is contested and requires better analytical tools to enable assessment. Contemporary analyses of these emerging technologies often expose the tenuous links or disconnections among the scientific and technical realities and mainstream scholarship on national and international security, especially with regard to the potential to have impact on strategy and policy. The research underway is advancing the strategic understanding of these game-changing technologies and the development of meaningful and testable metrics and models to help reduce that surprise

#### NATO is a valuable base for countermeasures against hostile biotech users

d’Aboville 20 {“NATO: political choices for disruptive technologies.” Benoit d'Aboville (A former career diplomat, Ambassador d’Aboville served as Permanent Representative to NATO (2000-2005) and Senior Auditor at the French National Audit Court (2005-2011). During his diplomatic career, he has been posted in Washington, Moscow, Geneva, Madrid (CSCE) and New York. Since 2014, he is Vice-President of the Fondation p our la Recherche Stratégique in Paris). NATO Defense College Foundation. Published 2020, Accessed June 27, 2022. https://www.natofoundation.org/game-changers-2020-dossier-nato-and-disruptive-technologies-disruptive-technologies-and-security/} – TW

The report titled “Science & Technology Trends 2020–2040 Exploring the S&T Edge NATO”, published in March 2020 by the NATO S&T Organisation (STO) is a good starting point to broach a technically complicated and politically complex debate. The report (supported by the Alliance’s defence S&T community and NATO Allied Command Transformation – ACT) points to several highly interrelated areas that are considered to be major strategic disruptors over the next 20 years: “technologies or scientific discoveries that are expected to have a major, or perhaps revolutionary, effect on NATO defence, security or enterprise functions in the period 2020-2040”. Amongst the several emerging and disruptive technologies (EDTs), either currently in the nascent stages of development or undergoing rapid revolutionary development, a few specific examples should be mentioned: data analysis, **artificial intelligence** (**AI**), autonomous vehicles, new space platforms, hypersonic missiles, quantum computer technologies, **biotechnology used for defence**, and new materials. These are at different stages of development. Data, AI, autonomy, space and hypersonics are already in use and are seen to be predominantly disruptive in nature, as developments in these areas build upon long histories of supporting technological development. As such, a significant or revolutionary disruption of military capabilities is either already ongoing or will have a significant impact over the next 5–10 years. New developments in quantum, biotechnology and materials are assessed as being emergent, requiring significantly more time, 10–20 years, before their disruptive natures are fully felt on military capabilities. Amongst the full list of the technologies named in the report, four EDTs seem to be especially worth considering, if only because they are already a current priority for many allies at the national level. Autonomy and unmanned vehicles are already widely in operational use in allied operations, but their proliferation (e.g. cheap drones in Syria and Libya) increase vulnerabilities for allies in asymmetrical combat and can be used in swarms to clear the way for penetration of strike aircraft in air defence systems, supplanting the old Wild Weasel tactics. The use of space for C4ISR, navigation and defence is central to many of NATO’s existing capabilities, and ultimately it is the foundation upon which NATO has built a technological edge. In the next 20 years this will imply increasingly capable and ubiquitous C4ISR capabilities and the combination with AI will be synergetic. On the other hand, risks from ASAT (anti-satellite) or robotic parasitic systems will become more acute. More congested orbits, the increased use of large constellations of small satellites and increasing levels of space debris will impact the effectiveness and reliability of space-based systems, impairing the Alliance capabilities. Hypersonic technologies applied to rocket, scramjet or combined cycle propulsion systems, are now considered a priority in the USA, China and Russia, as well as by Japan, France, the UK, India and Australia. This class of weapon system includes air-launched strike missiles (HCM, Hypersonic cruise missiles), manoeuvring re-entry glide vehicles (HGV, Hypersonic glide vehicles), land-sea ship killers, and post-stealth strike aircraft. Countermeasures against individual, salvo or swarm hypersonic systems are particularly challenging due to their speed and manoeuvrability. To what degree this puts into question the existing missile defence programmes and the existing decision cycles of deterrence are essential debates that should, sooner or later, be opened within the Alliance. Although new quantum technologies have the potential for a revolutionary impact on NATO operations, most (but not all) are in the early stages of development, and significant technical challenges lie ahead before operational systems can be developed. The use of ultra-sensitive gravimetric, magnetic or acoustic sensors will significantly increase the effectiveness of underwater warfare capabilities, potentially rendering the oceans transparent. Quantum technologies have the potential to make stealth technologies obsolete, provide more accurate target identification, and allow covert detection and surveillance. Accurate clocks will enable the development of (precision) positioning, as well as precision navigation and timing (PNT) systems for use in GPS-denied or inaccessible areas (such as under-ice). Unbreakable quantum key encryption will support substantially more robust and secure communication. Quantum computing, potentially the most disruptive quantum technology of all, has the potential to render previously untenable classical computational tasks. Some of the conclusions of the NATO STO study are worth quoting in full: “[The] productive employment of these new technologies will pose severe challenges and raise fundamental questions of ethics and legality. […] **Information itself will increasingly become a warfighting domain and a commodity.** In parallel, the use of automated and potentially autonomous systems in operations in which humans are not directly involved in the decision cycle, will become more widespread and increase the pace of strategic competition”. “**While it is likely that the Alliance will maintain a degree of technological advantage in some EDT areas, EDTs** (in particular **AI**, Big Data, **biotech**nology, hypersonic) will likely become cheaper and **more accessible to hostile actors**. **The Alliance’s dependence on advanced technology could increasingly become a liability if care is not taken on how they are integrated and in the development of counter-measures.** … It is essential that we understand the nature of these new technologies, analyze their implications for defence and security, explore the opportunities they offer, push the boundaries of what is possible, and ensure that we are ready to mitigate their risks. NATO is by its international and collaborative nature well placed to consider these issues”. **NATO offers proven consultative mechanisms and a unique network for collaboration on defence and security questions, being a natural platform for collaboration. Other proposed format like “techno-democracies” might prove more difficult to manage than expected. But for such a debate to be productive, one has first to convince the decision makers and the public in the Alliance that these technologies applied to defence have an increasing momentum on their own, and, if we want to redirect it towards our own security interests** (or convince others that there is a potential shared interest through arms control), **we cannot be complacent or ignore facts**. **Denying ourselves these capabilities will not stop potential adversaries in pursuing them for their own interests**.

### Bioterror impact

#### Their defense is wrong – it’s already happened in small events

Ronit Langer and Shruti Sharma ’20, November 20. Ronit Langer was a Scoville Fellow working with Michael Nelson in the Technology and International Affairs Program. Shruti Sharma is a senior research analyst with the Technology and Society Program at Carnegie India, where she is currently working on exploring the challenges and opportunities in leveraging biotechnology to improve public health capacity in India. “The Blessing and Curse of Biotechnology: A Primer on Biosafety and Biosecurity,” CARNEGIE, https://carnegieendowment.org/2020/11/20/blessing-and-curse-of-biotechnology-primer-on-biosafety-and-biosecurity-pub-83252

Continuing advances in biotechnology provide a plethora of opportunities to address global challenges such as the spread of infectious diseases, food insecurity, and environmental degradation. However, the same technologies can be deployed by nefarious actors or hostile states to create deadly pathogens that can deliberately cause human infections, negatively target agricultural supply chains, or disrupt existing ecological balances. The world has already seen some troubling historical precedents of the deliberate misuse of biotechnology to develop bioweapons, instances of accidental releases of living organisms from labs, and cases of laboratory-acquired infections.

#### Bioweapons can cause extinction.

Casadevall 12 (The future of biological warfare, Arturo Casadevall, MOLECULAR MICROBIOLOGY & IMMUNOLOGY BLOOMBERG DISTINGUISHED PROFESSOR ALFRED & JILL SOMMER PROFESSOR AND CHAIR PROFESSOR, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3815869/, 6-27-22) -JV

In considering the importance of biological warfare as a subject for concern it is worthwhile to review the known existential threats. At this time this writer can identify at three major existential threats to humanity: (i) large‐scale thermonuclear war followed by a nuclear winter, (ii) a planet killing asteroid impact and (iii) infectious disease. To this trio might be added climate change making the planet uninhabitable. Of the three existential threats the first is deduced from the inferred cataclysmic effects of nuclear war. For the second there is geological evidence for the association of asteroid impacts with massive extinction (Alvarez, 1987). As to an existential threat from microbes recent decades have provided unequivocal evidence for the ability of certain pathogens to cause the extinction of entire species. Although infectious disease has traditionally not been associated with extinction this view has changed by the finding that a single chytrid fungus was responsible for the extinction of numerous amphibian species (Daszak et al., 1999; Mendelson et al., 2006). Previously, the view that infectious diseases were not a cause of extinction was predicated on the notion that many pathogens required their hosts and that some proportion of the host population was naturally resistant. However, that calculation does not apply to microbes that are acquired directly from the environment and have no need for a host, such as the majority of fungal pathogens. For those types of host–microbe interactions it is possible for the pathogen to kill off every last member of a species without harm to itself, since it would return to its natural habitat upon killing its last host. Hence, from the viewpoint of existential threats environmental microbes could potentially pose a much greater threat to humanity than the known pathogenic microbes, which number somewhere near 1500 species (Cleaveland et al., 2001; Taylor et al., 2001), especially if some of these species acquired the capacity for pathogenicity as a consequence of natural evolution or bioengineering.

#### Bioterror causes extinction.

Cooper ‘13 [Joshua Cooper, 1/23/13, University of South Carolina, “Bioterrorism and the Fermi Paradox,”<http://people.math.sc.edu/cooper/fermi.pdf>]

This is a perfect recipe for bioterrorism, and, given the many very natural pathways for its development and the overwhelming evidence that precisely this course has been taken by humanity, it is hard to see how bioterrorism does not provide a neat, if profoundly unsettling, solution to Fermi’s paradox. One might object that, **if** omnicidal **individuals are** **successful in releasing highly** virulent and deadly genetic malware into the wild, they are still unlikely to succeed in killing everyone. However, even if every such mass death event results only in a high (i.e., not total) kill rate and there is a large gap between each such event (so that individuals can build up∂ the requisite scientific infrastructure again), **extinction would be inevitable** regardless. Some of the engineered bioweapons will be more successful than others; the inter-apocalyptic eras will vary in length; and post-apocalyptic∂ **[as] environments may be so war-torn, disease-stricken, and impoverished of genetic variation that they may culminate in true extinction events even if the initial cataclysm ‘only’ results in 90% death rates**, since they may cause the effective population size to dip below the so-called “minimum viable population.” This author ran a Monte Carlo simulation using as (admittedly very crude and poorly informed, though arguably conservative) estimates the following Earth-like parameters: bioterrorism event mean death rate 50% and standard deviation 25% (beta distribution), initial population 1010, minimum viable population 4000, individual omnicidal act probability 10−7 per annum, and population growth rate 2% per annum. One thousand trials yielded an∂ average post-space-age time until extinction of less than 8000 years. This is essentially instantaneous on a cosmological scale, and varying the parameters by quite a bit does nothing to make the survival period comparable with the age of the universe.

### China biotech hegemony rising

#### China is making advances in technology and restructuring military – threatens U.S. hegemony

Kania, Adjunct Senior Fellow with the Technology and National Security Program at the Center for a New American Security, 11-3-19 (Elsa, 11-3-19, “Minds at War,”  *National Defense University,* p. 89,<https://www.jstor.org/stable/26864278>, accessed 6-25-2022, , FLC

Although technological advantage has been a key pillar of U.S. military power and national competitiveness, China is catching up, aspiring to take the lead in today’s strategic technologies. Pursuing military innovation as a priority and national imperative, the Chinese military appears to be enthused with the possibility that today’s RMA could disrupt the future military balance to its advantage. Today, China possesses a stronger technological foundation for future military power, despite confronting continued challenges in the development of “key and core” (关键核心) technologies, and the PLA is looking to improve its capacity to leverage academic and commercial advancements to enable future military capabilities, including artificial intelligence, biotechnology, and quantum technology.

The PLA is greatly concerned about being subject to technological surprise and equally concerned with opportunities to achieve it. Future primacy in these fields, which could prove important to future military advantage, may remain highly contested between the United States and China. However, the process of military innovation that is required to operationalize these capabilities will prove inherently challenging, and the feasibility of certain aspects of the PLA’s strategic thinking and theoretical explorations remains to be seen. Of course, these technologies remain quite nascent, and the process of research, development, experimentation, and operationalization that is required to realize their full potential may be lengthy and complex, requiring adjustments that are challenging for any bureaucracy.

However, the PLA today is fighting to innovate. It is striking that the PLA has introduced major changes and reforms to its military scientific enterprise, including through efforts to recruit and support more junior scientists, while also recruiting more civilians for technical positions. The prominence of military scientists in PLA leadership may also provide powerful champions for this agenda. Ultimately, Xi Jinping’s demand that the PLA pursue innovation could serve as a powerful impetus for peacetime innovation, even as the ideological constraints upon an authoritarian military that is de facto the armed wing of the Chinese Communist Party could impede creativity and initiative. The future trajectory of these concepts and potential capabilities will merit continued analytic and academic attention as such research progresses.

#### China biotech growing fast

Senior ‘21 (Melanie Senior; Experienced biopharmaceutical analyst, “China at the threshold” [https://www.nature.com/articles/s41587-021-00973-w#auth-Melanie-Senior] Accessed 6/27/22, TR)

Behind the record-breaking numbers is a force that will endure into 2021 and beyond: the **rise of** China’s innovative biotech sector. Chinese companies accounted for over a third of global biotech IPOs in 2020, up from a quarter the previous year. China’s stock exchanges hosted six of the top ten largest IPOs globally (Fig. 1 and Table 2). Western regulators, including the US Food and Drug Administration (FDA), are starting to welcome Chinese-developed products. Put that together with a growing domestic market that is increasingly receptive to innovative therapies, and the landscape for global **biotech** is radically **changing**.

Chinese healthcare is no longer only about domestic manufacturing, state-owned enterprises and traditional medicines or copycat Western drugs. A **fast-growing** cohort of **Chinese biotechs** is developing differentiated medicines, not just for the large and increasingly innovation-friendly home market, but for the United States and other Western nations. FDA officials are increasingly willing to accept drug data gathered in China. The first China-developed cancer drug, BeiGene’s Brukinsa (zanubrutinib, an oral small-molecule Bruton’s tyrosine kinase (BTK) inhibitor for mantle cell lymphoma), was approved in the United States in late 2019; a handful of others have received FDA Fast Track or Breakthrough designation or are approaching submission.

**Investment** in Chinese biotech reflects its growing global relevance. The **$8 billion** raised in stock exchange listings by Chinese biotechs easily overshadowed European companies’ $1.3 billion haul. Most of the Europeans’ money was raised on Nasdaq rather than on domestic exchanges—Germany’s mRNA vaccine maker CureVac secured one of the country’s largest IPOs on Nasdaq in August 2020 (Box 2). Nasdaq’s large specialist investor base continues to attract the most innovative companies wherever they are based.

China’s **momentum** has **continued** into 2021. The country was home to three of the top ten biotech IPOs in the first four months of the year. Two Chinese companies, Taicang-based Connect BioPharma and Suzhou-based cell therapy player Gracell Biotechnologies, made the top ten Nasdaq biopharma IPOs during the period (Table 3).

Some of China’s new biotechs are set up to serve and provide Western partners with access to the world’s second-largest biopharma market (Table 4). Amgen has established a 20.5% stake in the Chinese sector flagship BeiGene in Beijing. Shanghai-based JW Therapeutics was co-founded by Juno Therapeutics (now part of Bristol Myers Squibb) and contract research organization WuXi AppTec to develop cellular immunotherapies for Chinese patients. JW’s lead product, relmacabtagene autoleucel, an anti-CD19 CAR-T cell therapy for relapsed or refractory B-cell lymphoma, has priority review and hopes to be the first such cellular therapy on the local market. JW raised over $335 million in a November 2020 IPO in Hong Kong—only narrowly outside the top ten global biotech listings. In May 2020, Pfizer invested $200 million in five-year-old CStone Pharmaceuticals, accessing late-stage product sugemalimab (an IgG1 monoclonal antibody (mAb) targeting programmed cell death 1 ligand, or PD-L1) and obtaining a development and marketing partner for other oncology drugs in China.

But for many innovation-focused Chinese biotechs and their investors, **the domestic market isn’t enough**. Healthcare coverage, while growing, remains limited. Prices are low. Programmed death-1 (PD-1) inhibitors for cancer—among the first targeted medicines to be reimbursed on China’s National Drug Reimbursement List, in 2019—now cost up to 80% less than in the United States. That’s in part because several market entrants have created price competition, but even a first-in-class drug could not command anything near US prices. In per capita income terms, China remains a poor country.

Hence China’s biotechs need to go global. “We’ve never designed [targeted therapies] only for China,” says Christian Hogg, CEO of Hong Kong–based Hutchmed (formerly Hutchison China MediTech). The company was among the first biotechs to set up in China, in 2000, back when “there was not biotech sector at all,” recalls Hogg. Hutchmed sells two drugs in China: Elunate (fruquintinib), a selective small-molecule inhibitor of vascular endothelial growth factor receptors (VEGFR) 1, 2 and 3 for metastatic colorectal cancer (partnered with Eli Lilly); and Sulanda (surufatinib), a selective small-molecule inhibitor of VEGFR, fibroblast growth factor receptor and colony stimulating factor-1 receptor for advanced non-pancreatic neuroendocrine tumors. It is now building its US commercial infrastructure, using some of the $300 million raised via private investments in public equity (PIPEs) over the past 12 months. The company is dual listed on Nasdaq and AIM in the United Kingdom. Sulanda completed its rolling submission to the US FDA in May 2021 and a global phase 3 trial of Elunate is underway.

#### China is rapidly increasing its biotech innovation and growing faster than the U.S.

Allison et al. ’21, December (Graham Allison; Professor of Government at the John F. Kennedy School of Government at Harvard University, Kevin Klyman; Policy researcher at UC Berkeley, Karina Barbesino; Biotechnology researcher, and Hugo Yen; Research Assistant at Harvard Kennedy School's Belfer Center for Science and International Affairs, “*The Great Tech Rivalry: China vs the U.S.*” [https://www.belfercenter.org/sites/default/files/GreatTechRivalry\_ChinavsUS\_211207.pdf] Accessed 6/27/22, TR)

Over the past two decades, China has vaulted to the top ranks of biotech basic research. From 2007-2017, China’s biotech publications increased by 20% annually, with the second most publications after the U.S.103 In 2019 and 2020, China overtook Germany and the U.K. respectively and now ranks second in the Nature Index for high-quality life sciences research, increasing its annual output by 9% over the past year.104 Notably, its research output has exceeded America’s in multiple areas, including in CRISPR-modified crops (42% vs. 19% share) and transgenic plants (30% vs. 12% share). China also produces the most biotech patents annually, increasing its global share from 1% in 2000 to 28% in 2019 while the U.S. share dropped from 45% to 27%.105 In biomedical patents, China’s annual growth rate of 16% far exceeds America’s 3%, and in cell therapy patents China leads in both total patents and growth rate.106 Where China lags in basic research, it has excelled in developing applications. Consider genomics and genomic technology as a representative arena. While the U.S. led the world in coordinating and completing the Human Genome Project at the start of the millennium, China in 2018 launched the world’s largest genome project, which project director Dr. Wang Yadong stated will “map out [the] Chinese people’s genome atlas by sequencing the genes of 100,000 individuals, in an effort to identify [the] genetic basis of health disorders of Chinese.”107 After acquiring U.S.-based Complete Genomics in 2013, Chinese genomics giant BGI is now the world’s largest genetics research center and can sequence human genomes for a record-breaking $100 (6 times less expensive than its competitors and 100,000 times cheaper than the cost in 2000).108 In CRISPR research, the U.S. maintains a lead in total papers published, but this lead is much narrower for recent years. In 2018, the U.S. published 898 papers and China published 824.109 More notably, that same year, Chinese scientist He Jiankui crossed a bioethical red line when he used CRISPR to create the world’s first genetically-modified babies. Although He was later criticized for violating Chinese and international bioethical standards, this case was nonetheless reflective of China’s looser regulations around CRISPR applications, which have allowed China’s human studies to far outpace those in the United States, with half of all CRISPR clinical trials taking place in China.1

#### China is set to outcompete the U.S. in biotech and assume global hegemony

Carlson & Wehbring 20 {“Two Worlds, Two Bioeconomies: The Impacts of Decoupling US–China Trade and Technology Transfer.” Rob Carlson (Dr. Rob Carlson is a principal at Biodesic, a managing director at Bioeconomy Capital, and an affiliate professor in the Paul G. Allen School of Computer Science and Engineering at the University of Washington. He has served as a consultant on technical, economic, and security issues for the United Nations, the World Health Organization, the Biological Weapons Convention Implementation Unit, and the US and other governments. Carlson is the author of the book Biology Is Technology: The Promise, Peril, and New Business of Engineering Life.) and Rik Wehbring (Rik Wehbring is a principal at Biodesic and a managing director at Bioeconomy Capital. He is an entrepreneur and systems engineer with an extensive technical and operational background developed over 20 years of working in Silicon Valley. He has been a company founder multiple times, including as cofounder of one of the first modern “garage biology” start-ups.). National Security Report, Johns Hopkins Applied Physics Laboratory. Page 23-29 (conclusion and recommendation). Published 2020, Accessed June 25, 2022. https://www.jhuapl.edu/Content/documents/Carlson\_Wehbring-Biotech.pdf} – TW

Conclusion. China and the United States today each generate at **least 2 percent of GDP from biotechnology**. Both countries are looking for more. The combination of biological engineering and biomanufacturing constitutes a flexible and powerful technology platform, mastery of which is critical to the physical and economic security of both China and the United States, whether separated or cooperating, in the twenty-first century. While a crude assessment of sector revenues may lead to the conclusion that the United States is presently in the lead technologically, **the ongoing digital transformation** of biological engineering **will accelerate the progress of whoever successfully develops and** **implements these tools**. China has made surpassing US capabilities in biological engineering a central pillar of its twenty-first century industrial strategy, and the government is investing in a long-term program to accomplish that goal. While “decoupling” has become a buzzword in the US policy circles over the last three years, it is also emerging from policy proposals in China. President Xi Jinping has placed increasing emphasis on increasing indigenous innovation, and his government in essence “seeks to ringfence the entire innovation ecosystem.”107 One question policymakers on both sides must consider is to what extent either country is in a position to sustain “ring-fenced” indigenous innovation, and in what areas, or whether that isolation will lead to stagnation. Moreover, we must also ask whether decoupling direct connections in biotechnology between the two economies would result in meaningful separation, or whether capital, trade, and information might still continue to flow between the countries via a third nation or global network. Any proposal to decouple the two economies should include metrics to measure the benefits, and costs, of implementation to ensure that the position and interests of the United States are indeed improved by such a move. For example, it would appear that China would be harmed in the short term by decoupling because China’s commercialization efforts depend on importing early innovation, despite claims to the contrary. Yet the US lead in biotechnology is fragile and will wither without diligent effort. We find that, while the United States appears to hold a lead over China, **the United States is in danger of recapitulating in biotechnology those past practices in trade and IP transfer that have facilitated**, in other domains, **the acceleration of China’s** **technological** **ambitions**. The United States’ laissez-faire approach to the market and to planning has its advantages but also its costs, where the latter now negatively impact physical and economic security. A hands-off attitude, coupled with a short-term focus and a complacency about China’s intent to improve its capabilities, now puts the US lead at risk even as scientific exchange and trade are increasing. The current global pandemic has exacerbated the already elevated political tensions between the two countries and has put the relationship under strain and scrutiny. And yet this disruption can also be viewed as an opportunity to diagnose and address these issues. A substantial component of the present trade and security disputes between the United States and China comprises claims and counterclaims around IP and trade secrets. The US position is that China acquires IP and process knowledge through unfair and illegal means, while the Chinese position is that the United States is attempting to “contain China’s rise” through unfair and illegal means; “decoupling could be seen as ‘strategic blackmail’ for Washington to try to prevent China from growing stronger.”108 There is a significant difference, however, between the United States working to prevent industrial espionage and insisting on fair play on the one hand and intentionally containing indigenous technological innovation to suppress the development of China on the other. We note that accusations of the United States targeting China specifically for containment ignore seven decades of post–World War II global outreach and scientific exchange sponsored by the United States through various branches of the United Nations, the OECD, and NATO. The Soviet Union was a participant in many of these forums, even while it was subject to restrictions on technology developed in the West during the years when it explicitly portrayed itself as a foe and actively sought to undermine US interests around the world. Beijing has recently reiterated that it sees its interests in opposition to those of Washington, while at the same time it continues to rely on research funded by American taxpayers to supply Chinese technological development. This tension creates a potential strategic vulnerability for China. Indeed, casting the US defense of the rule of law and of domestic IP development as a nefarious plot to restrict Chinese growth betrays a concern that the existing, explicit state strategy of importing external early-stage research to support domestic commercialization is at risk.

Recommendations. **We should measure everything better**. By necessity, the quantitative economic data presented here was gathered from disparate sources, of variable quality, over a period of more than a decade. There is no centralized source of economic data for biotechnology from any country, which hamstrings any effort to either assess strengths and weaknesses or evaluate costs and benefits of proposed policies.109 **The US government should institute mechanisms to measure its domestic bioeconomy and also those of rival states**. Of particular utility would be highquality data (or at least well-bounded estimates) describing (1) sector revenues, (2) sector employment, (3) relevant international trade, (4) capital flows, and (5) state and private investment in R&D. The ultimate goal of this measurement activity is to improve our situational awareness. We should develop the strategy and framework for response. **The United States has begun contesting Chinese actions**—for example, by using CFIUS to reduce IP transfers—**without necessarily developing a framework for understanding the contest**, nor for choosing goals, nor for developing strategies and tactics to achieve those goals. Such a framework needs to acknowledge that China sees itself engaged in an existential struggle, even if we do not. Any strategy must be calibrated to a time line of decades, far longer than congressional or presidential terms, and must survive across administrations. It must also include specific tactical policy measures subject to near-term implementation. For example, we suggest that, at a minimum, the US government examine the feasibility of including contractual language in federal research grants that requires approval before the export of taxpayer-funded early-stage research and IP overseas. Investing to develop and maintain the lead in advanced bioengineering and biomanufacturing will require concerted attention and effort. This is not a sprint to be won, but rather **a** long-term competition **that will require continual effort**; there is no finish line, and no time limit. **But there is a looming, and exigent, deadline for organizing ourselves to compete**. **It is not an exaggeration to classify this race as an extension of** the Great Game of international affairs**, because that is precisely the way our global competitors describe it**. **We must be engaged for the long haul, and we must begin today**.

#### China is making iron man.

**Kroenig 21** (Will Emerging Technology Cause Nuclear War?:Bringing Geopolitics Back In, Matthew Kroenig, Professor in the Department of Government, https://gufaculty360.georgetown.edu/s/contact/00336000014ReIyAAK/matthew-kroenig, 6-27-22) -JV

Biotechnology could be exploited to produce “super soldiers.” China has genetically engineered beagles with three times the muscle mass of a typical canine, a technology that could possibly be applied to humans. Exoskeletons could provide soldiers with superhuman strength, and brain implants promise superior cognitive performance. China employed exoskeletons in combat in its 2020 border conflict with India. It is not yet clear how these new technologies, when combined with novel operational concepts, will affect the future of warfare, but it is likely they will. A future state may, for example, be able to use additive manufacturing to produce masses of inexpensive drones directed by new AI algorithms to swarm and overwhelm adversaries. The attack might be preceded by cyber and counterspace attacks that blind an adversary and disrupt its command and control. Following a successful advance, the country could then employ directed energy weapons, autonomous mines, and other advanced defenses to lock in territorial gains and thwart enemy attempts to roll back its aggression. It is possible that the first state to hone these technologies and devise effective operational concepts will have a military edge over its opponents.

### Hegemony solvency

#### The US needs to cooperate and establish biotech norms to combat China

Fox 5-25-22 {“The Biotech Battlefield: How to Contend With China’s Risky R&D.” Dov Fox (Professor of Law, Herzog Endowed Scholar, and Director of the Center for Health Law Policy & Bioethics at the University of San Diego School of Law). Foreign Affairs. Published April 25, 2022, Accessed June 27, 2022. https://www.foreignaffairs.com/articles/china/2022-04-25/biotech-battlefield} – TW

Ahead of the 2022 Winter Olympics in Beijing, China deployed a novel method for selecting its athletes. According to the Chinese Ministry of Science and Technology, Beijing sequenced the genomes of its elite competitors to detect more than 100 markers linked to “speed, endurance, and explosive force.” It then used the results in part to determine who would go on to represent China at the upcoming games. Beijing’s 11th-place showing in the medal count suggests that the tactic didn’t work exactly as planned. Athletic success, after all, comes from a complicated mix of constitution, training, and determination, so advanced genetic screening may do little to predict who wins or loses. But China’s Olympic program is just one part of a larger project to harness the power of biotechnology for strategic goals. Beijing is currently investing trillions of dollars in everything from synthetic biology and artificial intelligence to neuroengineering and genomic data banks—advances that stand poised to transform how people relate to one another and to the natural world. But China’s approach to these developments—exemplified by lax ethical standards and human rights abuses—is deeply troubling. “The more technology we have, the more dangerous we are to ourselves and entire humankind,” explained Dr. Rao Yi, a neurobiologist at Peking University. Unfettered by respect for privacy, transparency, and human rights, Beijing’s biotechnology efforts could threaten the economic well-being and national security of the United States and the global order. **The bioethics wars are here, but Washington isn’t ready**. For the first time since 1974, the United States is without a federal bioethics commission to guide policymakers and public debate on controversial issues. Congress should authorize a new commission—or President Joe Biden should sign an executive order to create a new one. **Simultaneously, the United States must engage international institutions to restore the core principles of openness and justice in the life sciences. Unless it reclaims moral leadership in this space, Washington will cede the world’s biotechnology future to authoritarian regimes whose secrecy and repression extend far beyond their borders.** PLAYING WITH FIRE Morally fraught experiments have flourished in China in recent years. In 2017, surgeons at Harbin Medical University defied international condemnation to attempt the first human head transplant. In 2018, a Shenzhen biophysicist implanted embryos edited through experiments that risked introducing destructive mutations into the human gene pool. And in 2019, China’s Institute of Zoology invited a Spanish biochemist to create human-monkey chimeras as organ transplant sources. These boundary-pushing developments aren’t just the work of a few bad apples. Rogue scientists are the predictable product of a national system that reduces research oversight in Beijing to a “rubber stamp,” according to recent testimony before the World Health Organization by the Chinese medical ethicist Hu Qingli. Indifference is part of the problem. The Chinese Ministry of Health, for instance, ostensibly banned unauthorized stem cell therapies in 2012. But a decade later, pop-up stem cell clinics still hawk untested interventions to repair spinal cords and augment breasts. Corruption is another factor. Incidents of bribery at the China Food and Drug Administration, now known as the National Medical Products Administration, led to mass casualties from at least six tainted drugs meant to treat autoimmune disorders, erectile dysfunction, and other ailments. Then there is China’s heavy-handed program of biometric surveillance and population control. In 2018, Beijing used Islamic terrorism as a pretext to launch the most technologically sophisticated regime of data mining and collection that the world has ever seen. Drones with facial recognition cameras hover over regions such as Xinjiang while police at checkpoints take mandatory iris scans, blood samples, and genetic tests from Uyghur Muslims. Beijing exports this digital security and mass surveillance architecture to dozens of other countries, including Egypt and Uganda, where they have been used to persecute sexual minorities and religious dissidents. **Even countries that use these tools to promote public health and safety unwittingly supply China with their citizens’ biometric information**. According to a Reuters investigation, Shenzhen-based BGI Genomics is amassing and analyzing genetic data on women and fetuses from a noninvasive prenatal test that the firm developed in conjunction with the Chinese military. The kit is marketed in more than 50 countries, including Australia, Canada, Denmark, Germany, India, Pakistan, Spain, Thailand, and the United Kingdom. Roughly 8.4 million women have used it. One BGI study allegedly used a military supercomputer to “map the prevalence of viruses in Chinese women, look for indicators of mental illness in them, and single out Tibetan and Uyghur minorities to find links between their genes and their characteristics.” China’s top-down approach to biotechnology also has serious implications for family planning. The country’s now lapsed one-child policy was supposed to bring economic prosperity. Instead, it yielded an epidemic of forced sterilizations, abortions, and female infanticide that produced the country’s current lopsided sex ratio and aging workforce. But that experience hasn’t stopped Beijing from experimenting with new forms of genetic control. A 1995 law aimed at “avoid[ing] new births of inferior quality and heighten[ing] the standards of the whole population” requires couples at risk of passing along infectious or hereditary diseases to use long-term contraceptives or postpone marriage until after child-bearing age. In 2022, moreover, millions of Chinese parents will use state-subsidized “talent tests” to screen offspring for traits such as height, intelligence, memory, extroversion, musical ability, and athletic prowess. These policies of biological selection and enhancement extend beyond family planning. A 2016 Chinese government report, for instance, underscored the potential value of gene editing to boost troops’ combat effectiveness. Former U.S. Director of National Intelligence John Ratcliffe warned in a recent Wall Street Journal op-ed that the Chinese military is working to engineer “soldiers with biologically enhanced capabilities”—from superstrength to altitude sickness resistance. INNOVATE OR PERISH **Chinese developments in biotechnology demand a U.S. response. The last national bioethics commission lapsed in 2017, and Washington has yet to authorize a replacement. A newly established commission should engage with universities and industries to set norms and expectations around bioethics. Good models for this kind of public-private collaboration already exist**. Organizations such as the Secure DNA Project and the Morningside Group—independent coalitions dedicated to safely and fairly governing genetic synthesis and brain-computer interfaces, respectively—are examples of what scientists, ethicists, and others can accomplish together. Future interdisciplinary teams can act as gatekeepers to affirm moral standards and condemn transgressions—for instance, by determining who gets published in high-impact journals and invited to prestigious conferences. **These partnerships can also help bridge ideological differences on issues such as vaccine passports, gene-edited immunity, and challenge trials that pay people to test new therapies for COVID-19. These are debates that democratic societies are well equipped to handle. Four of the world’s biggest democracies—Australia, India, Japan, and the United States—have recognized the existential stakes of life sciences research and recently pledged to collectively tackle “the critical and emerging technologies of the future, beginning with biotechnology.”** That work should include establishing a global medical ethics consortium built on international agreements such as the Universal Declaration on Bioethics and Human Rights, treaties such as the Biological Weapons Convention, and multilateral arrangements such as the T-12—a group of technologically advanced democracies. **Still, democratic societies can’t maintain bioethical standards alone. Going forward, the United States and other democracies must engage with authoritarian states, especially on areas of shared interest, including biodiversity, climate change, and highly infectious diseases. A natural starting point is oversight to ensure that Beijing actually implements its Biosecurity Law of 2021—legislation designed to guide Beijing’s policies on everything from bioterrorism to biotechnology. Washington should also focus on developing new treaty guidelines for human experimentation and genetic-information sharing.** THE OLYMPIC SPIRIT China’s DNA-based approach to picking its 2022 Olympic competitors may look like a harbinger of a grim future. But the country’s athletic history also suggests a path for managing this new form of geopolitical competition. Between 1988 and 1998, 52 Chinese Olympic athletes tested positive for banned performance-enhancing drugs, including a half dozen gold medal winners. In response to the resulting international outcry, the International Olympic Committee created the World Anti-Doping Agency. Chastened, China developed the world’s most rigorous anti-doping measures—mandating education, exams, and pledges among athletes and coaches. Violators got lifetime bans. The Chinese state also sought to repair its reputation, funding new research and pledging long-term commitments to international anti-doping efforts. At the time, verification and transparency made it possible to hold China accountable for its ethics violations, and international pressure and the threat of meaningful sanctions drove Beijing to act more responsibly—in sports, anyway. Similar policies could work today in the field of bioethics, helping rein in China’s reckless behavior. In this way, Beijing’s revolutionary Olympic selection process could be the opening the world needs to thrash out the moral status of scientific advances just over the horizon.

#### NATO has to focus on maintaining a technological advantage to check Russia and China

Grabar-Kitarović 6-16-22 {“NATO Must Ensure Defense and Civilian Industries Work Together.” Kolinda Grabar-Kitarović (A Croatian politician and diplomat who served as President of Croatia from 2015 to 2020). Defense One. Published June 16, 2022, Accessed June 27, 2022. https://www.defenseone.com/ideas/2022/06/nato-must-ensure-defense-and-civilian-industries-work-together/368250/.} – TW

The internet, microwaves, and synthetic rubber came into our lives as products invented for military purposes. Even everyday things, such as undershirts and concentrated fruit juice were created to improve the combat readiness of armed forces. Though many people typically associate the military with war and suffering, **this industry has been a source of incredible progress,** **producing inventions that made our lives longer, healthier, and easier**. **These days, innovation is likely to run the other way**, with the military benefiting from inventions developed with private funding. A symbiotic relationship between military needs and human progress is not necessarily the default. Instead, it requires a well-oiled innovation ecosystem in which military and civilian industries share their expertise and knowledge with one another. NATO has recently announced several initiatives to build on past success, **but more are needed**—**particularly as members increase their military funding. Virtually all alliance members are investing more in defense or are soon planning to do so.** Germany, for example, declared that it would create a 100-billion-Euro fund and reach its 2% goal in 2022. Poland, which shares the longest EU border with Ukraine, has taken in more than 3.5 million Ukrainian refugees and promised to dedicate 3% of its GDP to defense. Croatia ramped up its defense investment to 2.3% of GDP. To ensure that this new investment spurs innovation and co-operation between military and civilian industries as well as academia, NATO announced in April the Defense Innovation Accelerator for the North Atlantic. DIANA will concentrate on deep technologies, including artificial intelligence, big-data processing, quantum-enabled technologies, biotechnology, novel materials, and outer space. In addition, 17 NATO nations have agreed to set up the world’s first multi-sovereign venture capital fund. It will invest 1 billion Euros in early-stage startups and other deep tech funds aligned with its strategic objectives. **But NATO members need to do more to maintain their technological advantage over Russia and China, who are also increasing spending on military research and development**. The trends make this clear. In 1960, the U.S. accounted for 69 percent of global R&D investments, with U.S. defense-related R&D accounting for no less than 36% of global spending. The bulk (65%) of U.S. investments in defense-related R&D was financed from the federal budget. However, by 2019, the U.S. share of global R&D fell to 30%, and the share of federal government investment in defense-related R&D fell from 65% to 21%, whereas the share of business investment in R&D has grown from 33% to 71%. This leaves no doubt that meaningful innovation is not possible without close co-operation with the private sector. As NATO prepares to adopt its next Strategic Concept at the summit in Madrid, **it is essential that it focus on mechanisms that maintain its technological advantage**. As part of GLOBSEC’s work at the Future Security and Defense Council, we have proposed several ideas **to help promote innovation in the Alliance**. **We are convinced that NATO’s innovation ecosystem must integrate public and private sectors to ensure this edge**.

### Economy solvency

#### Biotech key to the economy

Carlson & Wehbring 20 {“Two Worlds, Two Bioeconomies: The Impacts of Decoupling US–China Trade and Technology Transfer.” Rob Carlson (Dr. Rob Carlson is a principal at Biodesic, a managing director at Bioeconomy Capital, and an affiliate professor in the Paul G. Allen School of Computer Science and Engineering at the University of Washington. He has served as a consultant on technical, economic, and security issues for the United Nations, the World Health Organization, the Biological Weapons Convention Implementation Unit, and the US and other governments. Carlson is the author of the book Biology Is Technology: The Promise, Peril, and New Business of Engineering Life.) and Rik Wehbring (Rik Wehbring is a principal at Biodesic and a managing director at Bioeconomy Capital. He is an entrepreneur and systems engineer with an extensive technical and operational background developed over 20 years of working in Silicon Valley. He has been a company founder multiple times, including as cofounder of one of the first modern “garage biology” start-ups.). National Security Report, Johns Hopkins Applied Physics Laboratory. Page IX (summary). Published 2020, Accessed June 25, 2022. https://www.jhuapl.edu/Content/documents/Carlson\_Wehbring-Biotech.pdf} – TW

Summary. **Biotechnology**, the engineering and application of the science of biology to meet human goals, **is** **critical to economic success** in the twenty-first century. In the United States, revenues generated by biotechnology (principally drugs, crops, and chemicals) are **already larger than 2 percent** of gross domestic product and are growing approximately twice as fast as the economy as a whole. Individuals and news articles from China describe similarly sized biotechnology revenues there, but in both nations, the accuracy and precision of estimates is limited by the paucity of data. Revenues to date have been achieved using first-generation technologies. Second-generation technologies will be more powerful and could supply up to 60 percent of physical inputs to the global economy, with a direct economic impact of $4[**four**] **trillion a year**. Chinese leaders have identified biotechnology in writings and in pronouncements as critical to their vision of China as a dominant global economic power. To that end, they are pursuing a long-term strategy of climbing up the value chain and using a familiar set of tactics that includes the following: financial support for industry champions, intellectual property licensing from abroad, infrastructure spending (laboratories, technology parks, academic research), as well as IT hacking and industrial espionage. By contrast, **the** **U**nited **S**tates has adopted a laissez-faire approach and **has little strategy or policy** regarding biotechnology. The bioeconomies of the two nations may be similar in size but are configured differently. The United States relies on China for manufacturing (for example, 75 percent of active pharmaceutical ingredients), for services (for example, DNA sequencing), and for talented students who come to study and work at US universities. Meanwhile, China depends on external basic research to support a bioeconomy focused on commercialization of innovations created elsewhere. In the short term, decoupling would be painful for both countries. In the long term, it would be easier for the United States to replace manufacturing capacity and academic labor than it would be for China to find globally, or to replicate within China, a basic research and academic infrastructure that is the equivalent to that of the United States. There are no absolute impediments that would prevent the United States from ultimately reducing interactions to near zero. Instead, decoupling decisions must revolve around the cost and the time they would require to implement. These decisions are currently impossible to make in an informed fashion, and we therefore make two recommendations: (**1**) **the US government should measure the domestic bioeconomy**, and the bioeconomies of its rivals, with greater granularity and accuracy, and (**2**) **the US government should develop a framework and strategy for competing in biotechnology**.

### Democracy solvency

#### Cooperation between U.S. and her allies are needed to combat the threat of autocratic states

**Cohen, Adjunct Senior Fellow at the Council on Foreign Relations, and Fontaine, CEO of the Center for a New American Security, ’20** (Jared Cohen and Richard Fontaine, “Uniting the Techno-Democracies”, Foreign Affairs, <https://www.foreignaffairs.com/articles/united-states/2020-10-13/uniting-techno-democracies>, Accessed 6/27/22; Analina)

At the outset of the digital age, democracies seemed ascendant. The United States and like-minded countries were at the cutting edge of technological development. Policymakers were pointing to the inherently liberalizing effect of the Internet, which seemed a threat to dictators everywhere. The United States' technological advantage made its military more potent, its economy more prosperous, and its democracy, at least in theory, more vibrant.

Since then, autocratic states have caught up. China is at the forefront, no longer a mere rising power in technology and now an American peer. In multiple areas-including facial and voice recognition, 5G technology, digital payments, quantum communications, and the commercial drone market-it has surpassed the United States. Leaders in Cuba, Iran, North Korea, Russia, Venezuela, and elsewhere are increasingly using technology for illiberal ends, following China's example. And despite the United States' remaining advantage in some technologies, such as artificial intelligence (ai) and semiconductor production, it has fallen behind China in formulating an overall strategy for their use.

Almost in parallel, the United States and its allies have stepped away from their tradition of collaboration. Instead of working together on issues of common interest, they have been pulled apart by diverging national interests and have responded incoherently to autocratic states' co-optation of new technologies. Although officials in most democratic capitals now acknowledge the profound ways in which new technologies are shaping the world, they remain strangely disconnected from one another when it comes to managing them. Coordination, when it occurs, is sporadic, reactive, and ad hoc.

The liberal democracies are running out of time to get their act together: whoever shapes the use of emerging technologies such as ai, quantum computing, biotechnology, and next-generation telecommunications will have an economic, military, and political advantage for decades to come. But the world's advanced democracies have something the autocracies don't: a long history of multilateral cooperation for the benefit of all.

Because the issues are so diverse, what's needed now is not more piecemeal solutions but an overarching forum in which like-minded countries can come together to hammer out joint responses. This new grouping of leading "techno-democracies"-call it the T-12, given the logical list of members-would help democracies regain the initiative in global technology competition. It would allow them to promote their preferred norms and values around the use of emerging technologies and preserve their competitive advantage in key areas. Above all, it would help coordinate a unified response to a chief threat to the global order.

#### Who leads in the development and sale of technology will determine the future of the international order – it’s either democracy or autocracy, there is no in-between.

Beckly '22 - Associate Professor of Political Science at Tufts University, a Nonresident Senior Fellow at the American Enterprise Institute [Michael, March/April, "Enemies of My Enemy," https://www.foreignaffairs.com/articles/2021-02-14/china-new-world-order-enemies-my-enemy]

THE CLASH OF SYSTEMS

The history of international order building is one of savage competition between clashing systems, not of harmonious cooperation. In the best of times, that competition took the form of a cold war, with each side jockeying for advantage and probing each other with every measure short of military force. In many cases, however, the competition eventually boiled over into a shooting war and ended with one side crushing the other. The victorious order then ruled until it was destroyed by a new competitor—or until it simply crumbled without an external threat to hold it together.

Today, a growing number of policymakers and pundits are calling for a new concert of powers to sort out the world’s problems and divide the globe into spheres of influence. But the idea of an inclusive order in which no one power’s vision prevails is a fantasy that can exist only in the imaginations of world-government idealists and academic theorists. There are only two orders under construction right now—a Chinese-led one and a U.S.-led one—and the contest between the two is rapidly becoming a clash between autocracy and democracy, as both countries define themselves against each other and try to infuse their respective coalitions with ideological purpose. China is positioning itself as the world’s defender of hierarchy and tradition against a decadent and disorderly West; the United States is belatedly summoning a new alliance to check Chinese power and make the world safe for democracy.

This clash of systems will define the twenty-first century and divide the world. China will view the emerging democratic order as a containment strategy designed to strangle its economy and topple its regime. In response, it will seek to protect itself by asserting greater military control over its vital sea-lanes, carving out exclusive economic zones for its firms, and propping up autocratic allies as it sows chaos in democracies. The upsurge of Chinese repression and aggression, in turn, will further impel the United States and its allies to shun Beijing and build a democratic order. For a tiny glimpse of what this vicious cycle might look like, consider what happened in March 2021, when Canada, the United Kingdom, the United States, and the EU sanctioned four Chinese officials for human rights abuses in Xinjiang. The sanctions amounted to a slap on the wrist, but Beijing interpreted them as an assault on its sovereignty and unleashed a diplomatic tirade and a slew of economic sanctions. The EU returned fire by freezing its proposed EU-China Comprehensive Agreement on Investment.

In the coming years, the trade and technology wars between China and the United States that began during the Trump administration will rage on as both sides try to expand their respective spheres. Other countries will find it increasingly difficult to hedge their bets by maintaining links to both blocs. Instead, China and the United States will push their partners to pick sides, compelling them to reroute their supply chains and adopt wholesale the ecosystem of technologies and standards of one side’s order. The Internet will be split in two. When people journey from one order to the other—if they can even get a visa—they will enter a different digital realm. Their phones won’t work, nor will their favorite websites, their email accounts, or their precious social media apps. Political warfare between the two systems will intensify, as each tries to undermine the domestic legitimacy and international appeal of its competitor. East Asian sea-lanes will grow clogged with warships, and rival forces will experience frequent close encounters.

The standoff will end only when one side defeats or exhausts the other. As of now, the smart money is on the U.S. side, which has far more wealth and military assets than China does and better prospects for future growth. By the early 2030s, Xi, an obese smoker with a stressful job, will be in his 80s, if he is still alive. China’s demographic crisis will be kicking into high gear, with the country projected to lose roughly 70 million working-age adults and gain 130 million senior citizens between now and then. Hundreds of billions of dollars in overseas Chinese loans will be due, and many of China’s foreign partners won’t be able to pay them back. It is hard to see how a country facing so many challenges could long sustain its own international order, especially in the face of determined opposition from the world’s wealthiest countries.

Yet it is also far from guaranteed that the U.S.-led democratic order will hold together. The United States could suffer a constitutional crisis in the 2024 presidential election and collapse into civil strife. Even if that doesn’t happen, the United States and its allies might be rent by their own divides. The democratic world is suffering its greatest crisis of confidence and unity since the 1930s. Nationalism, populism, and opposition to globalism are rising, making collective action difficult. The East Asian democracies have ongoing territorial disputes with one another. Many Europeans view China as more of an economic opportunity than a strategic threat and seriously doubt the United States’ reliability as an ally, having endured four years of tariffs and scorn from President Donald Trump, who could soon be back in power. Europeans also hold different views from Americans on data security and privacy, and European governments fear U.S. technology dominance almost as much as they do Chinese digital hegemony. India may not be ready to abandon its traditional policy of nonalignment and back a democratic order, especially when it is becoming more repressive at home, and an order built around democracy will struggle to form productive partnerships with autocracies that would be important partners in any alliance against China, such as Singapore and Vietnam. Fear of China is a powerful force, but it might not be potent enough to paper over the many cracks that exist within the emerging anti-Chinese coalition.

If that coalition fails to solidify its international order, then the world will steadily slide back into anarchy, a struggle among rogue powers and regional blocs in which the strong do what they can and the weak suffer what they must. Some scholars assume—or hope—that an unordered world will sort itself out on its own, that great powers will carve out stable spheres of influence and avoid conflict or that the spread of international commerce and enlightened ideas will naturally maintain global peace and prosperity. But peace and prosperity are unnatural. When achieved, they are the result of sustained cooperation among great powers—that is, of an international order.

DOUBLING DOWN ON DEMOCRACY

History shows that eras of fluid multipolarity typically end in disaster, regardless of the bright ideas or advanced technologies circulating at the time. The late eighteenth century witnessed the pinnacle of the Enlightenment in Europe, before the continent descended into the hell of the Napoleonic Wars. At the start of the twentieth century, the world’s sharpest minds predicted an end to great-power conflict as railways, telegraph cables, and steamships linked countries closer together. The worst war in history up to that point quickly followed. The sad and paradoxical reality is that international orders are vital to avert chaos, yet they typically emerge only during periods of great-power rivalry. Competing with China will be fraught with risk for the United States and its allies, but it might be the only way to avoid even greater dangers.

To build a better future, the United States and its allies will need to take a more enlightened view of their interests than they did even during the Cold War. Back then, their economic interests dovetailed nicely with their geopolitical interests. Simple greed, if nothing else, could compel capitalist states to band together to protect private property against a communist onslaught. Now, however, the choice is not so simple, because standing up to China will entail significant economic costs, especially in the short term. Those costs might pale in comparison to the long-term costs of business as usual with Beijing—Chinese espionage has been estimated to deprive the United States alone of somewhere between $200 billion and $600 billion annually—to say nothing of the moral quandaries and geopolitical risks of cooperating with a brutal totalitarian regime with revanchist ambitions. Yet the ability to make such an enlightened calculation in favor of confronting China may be beyond the capacities of any nation, especially ones as polarized as the United States and many of its democratic allies.

#### Tech is intertwined with our society – coordination and cooperation with core values is key to maintain Western values as well as keep emerging technologies in check

Ehlert 21 {“ Why our values should drive our technology choices.” Dr Ulf Ehlert (The head of Strategy and Policy in the Office of the Chief Scientist at NATO headquarters. The views expressed are his own.). NATO Review. Published December 16, 2021, Accessed June 27, 2022. https://www.nato.int/docu/review/articles/2021/12/16/why-our-values-should-drive-our-technology-choices/index.html.} – TW

It is fair to say that our relationship with technology is complicated. Just look at headline topics like renewable energy or Artificial Intelligence (AI), or consider pharmaceuticals, automotive, consumer electronics, social media and biotechnology. On the topic of any of these technologies, you’ll almost certainly hear a cacophony of voices that range from promising a new era of happiness to predicting the doom of humanity. How can we make sense of these confusing perspectives, and how can we maximise the benefits of emerging and potentially disruptive technologies while effectively minimising their risks? How technology evolves As individuals, we have many different interests in technology. Some are interested in technology itself, but most are interested in the impact technology could have. These interests are often competing, and sometimes downright conflicting. Here is a simplified overview: the customer is looking for an affordable solution to a given problem, whereas the designer seeks to improve a given product; the innovator strives to demonstrate that her idea will work, while the investor is keen on the return on his investment; the corporate manager is committed to increasing his company’s revenue and market share, whereas the regulator focuses on questions of safety and environmental impact; the citizen wants to maximise her freedoms and have her rights protected, while the politician tries to balance all the aforementioned interests in devising policies for the benefit of all. This massive entanglement of interests includes technological ideas, economic and business interests, societal needs, and political considerations. Most of us, most of the time, pursue several of those interests in parallel: certainly as customers and citizens, but also as individuals and members of communities that affect our thinking and the choices we make. None of these considerations are predetermined, nor are the resulting choices and decisions. Therefore, the collective outcome cannot be predicted. We cannot pre-state the developmental path of any technology. However, it would be hare-brained to conclude that technology follows a path of its own or that we have no influence on technology at all. Quite to the contrary, **we** **all influence technology development**, only, this influence is rarely direct or immediately visible. The complexity researcher W. Brian Arthur summarised our multi-faceted relationship with technology as follows: “**Technology areas co-evolve together with society in a process of mutual adaptation**.” In other words, our choices today affect the trajectory of a given technology’s further development. That development will in turn present new opportunities and challenges that we will respond to, and this response will influence the further evolution of that technology in an open-ended process. Take the steam engine for example. This machine marked the beginning of the Industrial Revolution when it was first introduced to pump water from coalmines. That successful application triggered further imagination, as developers and users alike came to look for other problems a steam engine could solve. Those considerations led to the mechanisation of agriculture and manufacturing, so that the steam engine would ultimately replace horse and oxen as humankind’s primary power sources. The story did not end there. Railroads, factories, work contracts, and labour unions all emerged in response to that new technology. None of these long-term impacts were foreseeable, intended, or planned. Rather, they were the result of mutual influencing of technology and society. The steam engine marked the Industrial Revolution when it was first introduced to pump water from coalmines. © Local Histories The steam engine marked the Industrial Revolution when it was first introduced to pump water from coalmines. © Local Histories The history of the steam engine showcases how technology itself is neither good nor bad. But it is not neutral either. Technology is what we make it. Our choices matter. The question is “How can we make technology what we want it to be?” Shaping technology Any attempt at shaping the trajectory of a given technology faces a genuine dilemma between today’s knowledge about the future and the available means to affect or change that future. David Collingridge was the first to frame the major challenge of policy making on emerging technologies: “When change is easy, the need for it cannot be foreseen ; when the need for change is apparent, change has become expensive, difficult and time consuming.” We are literally caught between a rock and a hard place. For a nascent technology, we cannot know all its future applications, nor can we anticipate all its future impacts. Still, at this time, we can exert some control over its development path. In the future, when that technology is mature, we see its full impact. We can thus define what we would like to change. Alas, because the technology is already in the market, broadly distributed and widely used at that time, our means of control are very limited. We are struggling with a fundamental characteristic of technology development: the principle uncertainty inherent to an open-ended process without a knowable end-state. We cannot know in advance the future target for today’s policy intervention. But what can we actually do? Would it not be a fair choice to accept the limits of our knowledge, to simply “let things run their due course”? Think about social media. These services promised connectivity across the planet, facilitating new forms of meaningful information-sharing and enabling global communities of unprecedented scale and scope. Their free-of-charge operation is naturally attractive to users, but “behind the scenes” they rely on an advertising-backed business model. For that to work, users should ideally stay connected 24/7 in order to feed the evermore-sophisticated micro-targeting algorithms. Such addictive behaviour and the increasing manipulation facilitated by it are not in the users’ interest. Nor are echo chambers, hate speech, and the tampering with democratic elections in the interest of our societies. While the promise of social media is compelling, we made two cardinal mistakes. First, we accepted proprietary platforms operated by business enterprises. Second, we forgot that the purpose of business is profit, not philanthropy. The case of social media demonstrates that the users’ immediate choices can counteract their longer-term interests. Furthermore, a market left to its own devices can spin out of control. Both findings apply in particular to promising nascent technologies during their emerging early development. These fledglings still need to find the products they could successfully deliver and the markets they could serve. And all the various interest-holders still need to learn how they might be affected by those technologies. As such as technology evolves, we can be sure that innovators, investors and users will be the first on the scene, pursuing their specific interests. Designers and corporate managers will soon join, once the technology demonstrates its effectiveness and first product ideas prove viable. Only after the maturing technology’s impact has become tangible, will regulators, citizens, and politicians enter the discussion. I argue that –in the case of emerging and potentially disruptive technologies– these last interventions come too late. Social media promised connectivity across the planet, facilitating new forms of meaningful information sharing and enabling global communities of unprecedented scale and scope. Picture © Coosto What we want technology to be Throughout history, **we harnessed technology to gain or maintain military advantage**. Without much differentiation, we did what we could do: whatever was technologically doable appeared the right thing to do. Is that “can-do” attitude sufficient to guide us into the future? My answer is **no**, and I will argue in favour of a **values-driven approach towards technology for defence and security purposes**. Humanity lost its innocence Historically, humanity did not have the means to hurt its immediate existence, neither intentionally nor unintentionally. Early in the 20th century, we learned about the power of the atom. For the first time, we created a tool that could potentially destroy our very existence. Once that genie was out of the bottle, by mid-century, we worked hard to regain control by weaving nuclear arms control into the nascent international order. Whether we like it or not: humanity lost the innocence of ignorance. We have access to potentially destructive means and we know it. Hence, we can neither deny nor reject the responsibility we have for our technologies’ impact, both intended and unintended. These technologies are different Today, we face multiple emerging technologies that promise to disrupt our established ways, including AI, bio- and quantum technologies. They mature in parallel, at 21st century speed, in a hyper-connected world. Take one specific area: the combination of AI, Big Data (as input to AI), and autonomy (as one of the main applications of AI). This technology area promises to disrupt the information sphere and “change everything”, from maintaining situational awareness to supporting decision-making, from predictive maintenance to cyber defence. Yet amidst the euphoria about opportunities, we must afford a sober reality check and ask ourselves critical questions on how we want to develop, feed, and use such systems: would we consider the Chinese Social Credit System as a role model for collecting data? Should we accept black-box algorithms for data processing, when they present results, but cannot explain their plausibility? Should we apply AI in critical decision-making, where we seek to maintain human oversight? Most of the key technologies operate in the information domain. Given their superior connectivity and speed, their development is particularly challenging to follow, let alone anticipate. Yet, developers focus on civilian applications with global consumer markets in mind, and the Big Tech companies pushing these developments have become the most influential non-state actors on the planet. All of these factors increase the complexity of the problem space, while at the same time accelerating the speed to technological evolution. In short: our challenges keep growing, while our response time shrinks. Take one specific area: the combination of AI, Big Data (as input to AI), and autonomy (as one of the main applications of AI). This technology area promises to disrupt the information sphere and “change everything”, from maintaining situational awareness to supporting decision-making, from predictive maintenance to cyber defence. © Information Matters The West is not alone Our Western values, including the rule of law, democracy, individual liberty, and human rights, provide a solid frame for tackling those challenges. However, we must recognise that their universality is contested, sometimes subtly, sometimes overtly. As the political economist Jeffrey Sachs observed, “Geopolitical power and technological prowess are no longer the privileged preserve of the North Atlantic.” **It would be short-sighted to assume that Western countries could globally enforce emerging technologies**’ compliance with Western values. **Instead**, differences in values may well result in divergent technological competences that can, in turn, affect the global distribution of power. **Setting norms** – **a role for NATO**? Emerging and Disruptive Technologies (EDTs) came into NATO’s political focus in 2019, when NATO leaders adopted an implementation roadmap for seven such technologies. Regardless of their tremendous promise, we must realise that these technologies are not yet mature, not yet “fully out there”. Therefore, considerable uncertainty remains to which extent these fledgling technologies and their foreseeable applications are appropriately contained within established legal, ethical, and moral norms. These questions are not limited to military applications, nor do they stop at national borders: rather, they cut across many government departments and business sectors, and they affect humanity in its entirety**. In this complex, fast moving, high-stake setting, we must view technology and values as intertwined**. While our values should guide our use of technology, we must recognise that our technology choices will, whether intended or not, reflect the values we adhere to. As inaction is not an option, **we must take active measures to establish norms for the future use of technologies**; norms that are deeply rooted in our values; technologies that are currently emerging and have recognised disruption potential (**such as AI**, **biotechnology**, and quantum technology). How could we realistically master this novel challenge? **The following three proposals could pave the way**. **We must effectively cope with the uncertainties of technology evolution**. Hence, **I suggest evolutionary policy-making**, **building on current knowledge**, but **flexible enough so that today’s decisions can be adjusted or corrected in the future**. **We must strive to limit potential harm without unduly constraining the benefits a technology can bring**. **Therefore, our policies should set limits for the application of technologies** (such as genetically optimised super-soldiers) **rather than banning entire technology areas** (in this case, biotechnology). We need to understand when policy changes are necessary and what those changes should be. **Reflecting the diversity of interests, we need to institutionalise a broad stakeholder engagement that reaches out to all parties affected by a technology and influencing its evolution**. **Within this broadly applicable framing, NATO’s role is specific**. As the international organisation committed to defence and security in the North Atlantic area, it convenes considerable political, military, economic, and technological **power. Building in particular on its political and intellectual capital, the Alliance can credibly spearhead norm setting for technology applications in defence to comply with Western values**. With its recently published AI Strategy, NATO fulfils its traditional role in an innovative way. This Strategy embraces principles of responsible use, which express the value-driven norms that NATO and its member nations will adhere to in the application of AI. **By making these principles public, they set an example for other nations to consider and potentially adopt NATO’s principles**. This is an effective approach towards proposing and gradually implementing an international norm, not unlike the European Union’s General Data Protection Regulation. At the same, NATO responds to the globally distributed innovation landscape. **The NATO2030 initiative highlights the need to forge new coalitions** with likeminded partners beyond the North-Atlantic region. This broad outreach should not only extend to governmental organisations, it should in general expand the types of partners to collaborate with (even **within Allied nations**), to include non-governmental organisations, the private sector, academia, and civil society. Establishing norms to frame technology development within the limits of our established value system is a defining challenge of the 21st century. Our values alone should be the driving force for the policies we devise and the capabilities we field. **As technologies keep emerging, so should our policies for setting appropriate norms** bounded by the values we hold dear.

### Democracy impacts

#### Democracies must maintain a tech edge to prevent power wars

Kroenig, Mathew, Professor in the department of government at Georgetown, Winter 2021 (“Will Emerging Technology Cause Nuclear War?: Bringing Geopolitics Back In”, Air University, Winter, 2021, <https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15_Issue-4/D-Kroenig.pdf>, accessed 6/27/22, ,FLC)

This understanding of this issue leads to different policy prescriptions. If the technology itself is the problem, then it must be controlled and should not be allowed to spread to any states. In contrast, the framework outlined here suggests a different recommendation: preserve the prevailing balance of power in Europe and Asia. Technological change that, on balance, reinforces the prevailing international system should strengthen stability.

Leading democracies, therefore, should increase investments in emerging technology to maintain a technological edge over their adversaries. Export control and nonproliferation measures should be designed to deny emerging military technology to Russia and China. Arms control should be negotiated with the primary objective of sustaining the current international distribution of power. Making progress in these areas will be difficult. But the consequences of failure could be shifts in the international balance of power, conflict among great powers, and an increased risk of nuclear war.

#### Democratic backsliding spills over, risking nuclear war

Dr. Larry Diamond ‘19, Professor of Political Science and Sociology at Stanford University, Senior Fellow at the Hoover Institution, Senior Fellow at the Freeman Spogli Institute for International Studies, PhD in Sociology from Stanford University, Ill Winds: Saving Democracy from Russian Rage, Chinese Ambition, and American Complacency, p. 199-202

This is truer now than ever, for several reasons. We live in a globalized world, one in which models, trends, and ideas cascade across borders. Any wind of change may gather quickly and blow with gale force. People everywhere form ideas about how to govern—or simply about which forms of government and sources of power may be irresistible—based on what they see happening elsewhere. We are now immersed in a fierce global contest of ideas, information, and norms. In the digital age, that contest is moving at lightning speed, shaping how people think about their political systems and the way the world runs. As doubts about and threats to democracy are mounting in the West, this is not a contest that the democracies can afford to lose.

Globalization, with its flows of trade and information, raises the stakes for us in another way. Authoritarian and badly governed regimes increasingly pose a direct threat to popular sovereignty and the rule of law in our own democracies. Covert flows of money and influence are subverting and corrupting our democratic processes and institutions. They will not stop just because Americans and others pretend that we have no stake in the future of freedom in the world. If we want to defend the core principles of self-government, transparency, and accountability in our own democracies, we have no choice but to promote them globally.

It is not enough to say that dictatorship is bad and that democracy, however flawed, is still better. Popular enthusiasm for a lesser evil cannot be sustained indefinitely. People need the inspiration of a positive vision. Democracy must demonstrate that it is a just and fair political system that advances humane values and the common good.

To make our republics more perfect, established democracies must not only adopt reforms to more fully include and empower their own citizens. They must also support people, groups, and institutions struggling to achieve democratic values elsewhere. The best way to counter Russian rage and Chinese ambition is to show that Moscow and Beijing are on the wrong side of history; that people everywhere yearn to be free; and that they can make freedom work to achieve a more just, sustainable, and prosperous society.

In our networked age, both idealism and the harder imperatives of global power and security argue for more democracy, not less. For one thing, if we do not worry about the quality of governance in lower-income countries, we will face more and more troubled and failing states. Famine and genocide are the curse of authoritarian states, not democratic ones. Outright state collapse is the ultimate, bitter fruit of tyranny. When countries like Syria, Libya, and Afghanistan descend into civil war; when poor states in Africa cannot generate jobs and improve their citizens’ lives due to rule by corrupt and callous strongmen; when Central American societies are held hostage by brutal gangs and kleptocratic rulers, people flee—and wash up on the shores of the democracies. Europe and the United States cannot withstand the rising pressures of immigration unless they work to support better, more stable and accountable government in troubled countries. The world has simply grown too small, too flat, and too fast to wall off rotten states and pretend they are on some other planet.

Hard security interests are at stake. As even the Trump administration’s 2017 National Security Strategy makes clear, the main threats to U.S. national security all stem from authoritarianism, whether in the form of tyrannies from Russia and China to Iran and North Korea or in the guise of antidemocratic terrorist movements such as ISIS.1 By supporting the development of democracy around the world, we can deny these authoritarian adversaries the geopolitical running room they seek. Just as Russia, China, and Iran are trying to undermine democracies to bend other countries to their will, so too can we contain these autocrats’ ambitions by helping other countries build effective, resilient democracies that can withstand the dictators’ malevolence.

Of course, democratically elected governments with open societies will not support the American line on every issue. But no free society wants to mortgage its future to another country. The American national interest would best be secured by a pluralistic world of free countries—one in which autocrats can no longer use corruption and coercion to gobble up resources, alliances, and territory.

If you look back over our history to see who has posed a threat to the United States and our allies, it has always been authoritarian regimes and empires. As political scientists have long noted, no two democracies have ever gone to war with each other—ever. It is not the democracies of the world that are supporting international terrorism, proliferating weapons of mass destruction, or threatening the territory of their neighbors.

#### Influence with Europe is key to overall U.S. hegemony

Stephen Walt ’22, “America’s Foreign Policy Elite and the Decline of U.S. Primacy with Stephen Walt,” HARVARD KENNEDY SCHOOL, https://www.hks.harvard.edu/wiener-conference-calls/stephen-walt

It begins by recognizing we are still extremely secure here in the western hemisphere. That the main threat to the United States over the long haul would be a peer competitor. A rival country that dominated its own region, the same way the United States is the dominant power in the western hemisphere. A country that did that would be then free to project power around the world the same way the United States now does, including into the western hemisphere. Our main goal should be to prevent any state from dominating Europe, dominating Asia, dominating the Persian Gulf. Those are the key centers of power in the world.

### NATO resilience solvency

#### NATO is falling behind – they need to focus on cooperation on emerging technologies to revive their influence

Aronsson 18 {“Transatlantic Perspectives on Defense Innovation: Issues for Congress.” Lisa A. Aronsson (Analyst in International Affairs. Dr. Lisa Aronsson is a Research Fellow at the Center for Strategic Studies at the Institute for National Strategic Studies at National Defense University. Her research focuses on European security and transatlantic defense cooperation, and her interests include NATO strategy and operations, European Union defense, UK strategy, Mediterranean security, and gender. She is also a Nonresident Senior Fellow at the Atlantic Council where she is affiliated with the Transatlantic Security Initiative in the Scowcroft Center for Strategy and Security. Prior to joining CSR, Lisa worked as an analyst for the Congressional Research Service where she completed a study on the United States and its European allies responses to emerging technologies in defense. She has more than ten years working in think tanks, government and in universities in the United States and in Europe. She worked as a Research Fellow and Program Head at the Royal United Services Institute for Defense and Security Studies in London from 2008 to 2014. At RUSI she led the Institute’s research on US defense and security policy, UK-US cooperation, and transatlantic relations. She also lectured for UK Foreign Office and Ministry of Defense training courses, taught undergraduate courses at LSE, and published her work in RUSI publications as well as in European Security, and The Wall Street Journal among others. Prior to joining RUSI, Lisa completed a Ph.D. in International Relations and a Masters in International History at the London School of Economics and Political Science. She began her career as a newsroom assistant at the Associated Press Bureau in Rome after completing her BA at Wellesley College.). Congressional Research Services. Published April 24, 2018, Accessed June 17, 2022.} – TW

Summary. The North Atlantic Treaty Organization (NATO) has a renewed focus on defense and deterrence in Europe. In the past, NATO relied at least in part on its military technological superiority over potential adversaries for defense and deterrence in Europe, but some **policymakers are increasingly concerned that NATO’s technological superiority is eroding**. **Russia, China, and others are modernizing their militaries**, investing in new and emerging technologies, and exploring their applications for defense. In addition, **NATO faces rising operating costs**, and both **conventional and hybrid challenges in operating domains that have expanded to include cyberspace** as well as land, sea, and air. NATO must also contend with a growing group of nonstate challengers empowered by the pace of technological change and the global diffusion of technology. Increasingly dependent on ubiquitous technology, NATO is adapting to a world in which commercial investments in research and development (R&D) outpace those of governments, innovation cycles are shortening, and there is more international competition for technology and innovation. Since 2014, the United States has promoted defense innovation as a strategy to integrate new technologies into military capabilities and strengthen U.S. technological superiority over its potential adversaries. Today, many European allies acknowledge the importance of technology and innovation in defense, and they are beginning to respond to the changing environment by committing more resources to defense, and a few have national defense innovation strategies of their own. **The U**nited **K**ingdom, **France**, **and** **Germany**—NATO’s largest European defense spenders—are investing more in R&D and reforming their defense ministries to take more risk, procure technology faster, develop innovative concepts, and strengthen their links with commercial industry. Generally speaking, however, European governments are still in the early stages of developing what are predominantly national strategies. **NATO seeks to harmonize the allies’ national strategies** and defense investments, **promote collaboration**, **and build a shared vision for the future**. Its member states have sophisticated militaries, institutional frameworks for collaboration, and dynamic economies that attract talent, and support innovation. **Innovation challenges persist**, however, such as those related to NATO’s limited budgets and its bureaucratic processes, which make it difficult for NATO to attract the attention of commercial industry and global technology companies. NATO is also working to balance its member states’ concerns over national sovereignty with the need for more multinational cooperation, both from a cost and from an interoperability point of view. NATO also seeks to enhance interoperability among allied militaries and balance short-term priorities with preparations for future warfare. In the future, NATO might have to rely as much on its agility and on its capacity for innovation as it has relied on its military technological advantage in the past. Congress may consider what role the United States can play to support NATO’s adaptation, **and what channels Congress could pursue to exert influence over NATO’s direction**. There are both risks and **opportunities associated with sharing technology** **or** **developing it jointly with NATO allies**, and there are questions about what the United States and its allies expect from one another in terms of technology and innovation. **Technology has the potential to enhance NATO’s effectiveness**, but it also has the potential to undermine interoperability or political cohesion if the United States develops a technology-driven strategy and its NATO allies either do not keep pace, or do not adapt to strategic, political, and technological change.

### NATO good

#### US-NATO cooperation solves everything

**Stoltenberg, 21** (Jens Stoltenberg, Jens Stoltenberg is a Norwegian politician as the 13th secretary general of NATO. , 12-6-2021, accessed on 6-27-2022, Defense News, "NATO chief: The alliance is charting its path forward amid a changed security environment", <https://www.defensenews.com/outlook/2021/12/06/nato-chief-the-alliance-is-charting-its-path-forward-amid-a-changed-security-environment/)-> JLI

These are turbulent times. The world is becoming more competitive, unstable and unpredictable. Russia continues its pattern of aggressive military and hybrid actions. China is more assertive abroad and oppressive at home. Together, they are at the forefront of an authoritarian challenge to the democratic international order. At the same time, cyberattacks are becoming more frequent, sophisticated and disruptive; terrorist threats persist; nuclear weapons are proliferating; and the changing climate precipitates instability and fuels crises. These challenges affect our security on both sides of the Atlantic. They are each different, but there is only one way for North America and Europe to tackle them, and that is together, in NATO. With U.S. President Joe Biden and his administration, as well as lawmakers on both sides of the aisle, firmly committed to the trans-Atlantic bond and to working more with Europe, we have a unique opportunity and profound responsibility to make our strong alliance even stronger. At the NATO summit in June, leaders endorsed our bold NATO 2030 agenda for the next decade and beyond to strengthen the alliance in a contested world. We decided to use NATO even more as the essential forum for security consultations and decisions among our 30 nations. We are strengthening our deterrence and defense posture across all domains — land, sea, air, space and cyberspace. We are continuing to fight terrorism and work with the international community to contribute to stability on our borders, including by drawing important lessons from past missions. At the same time, we are stepping up our efforts in other areas, notably on resilience, technology and the security impact of climate change. We are developing alliancewide objectives to boost the resilience of our societies, infrastructure and supply chains. By reducing vulnerabilities and dependencies, we will better resist outside interference, bounce back faster from attacks and ensure our militaries can effectively operate at all times. Working, together in NATO, we are sharpening our technological edge to remain competitive. This includes investing in the latest technologies, from artificial intelligence to biotech and quantum computers. We have launched a Defence Innovation Accelerator for the North Atlantic, or DIANA, and have set up a new NATO Innovation Fund. Both DIANA and the Innovation Fund will allow us to better harness civilian innovation for our security and facilitate trans-Atlantic cooperation and exchanges on critical technologies. Finally, we are addressing the impact of climate change on our security. It is a threat and a crisis multiplier, and we have to adapt our awareness and readiness accordingly. Allies are also investing in sustainable solutions, including biofuels for jet aircraft and solar panels to power equipment. In addition, and for the first time ever, NATO is developing a methodology across the alliance to map military emissions so we can cut them. In all these areas, NATO will engage even more closely with partners that share our values and interests, including countries, organizations, private companies and academic institutions. Preserving peace, the global rules and our democratic way of life is a collective effort. In June 2022, NATO leaders will meet again, this time in Madrid, Spain. They will endorse NATO’s next Strategic Concept — a key document that will chart the way ahead for the alliance. The last Strategic Concept, which dates back to 2010, refers to Russia as a strategic partner; it does not mention China, and only briefly alludes to technology and climate. The new document will reflect our changed security environment and restate our fundamental values while reaffirming the centrality of the trans-Atlantic bond to our security and defense. As we look to the year ahead, we must continue to deliver on our commitment to trans-Atlantic unity and turn our NATO 2030 decisions into action. This way, we will continue to ensure security and freedom of all our people in a more uncertain world. Jens Stoltenberg is the secretary general of NATO.

## Solvency

### NATO say yes

#### Growing interest in tech cooperation between U.S. and her allies

**Goodman, senior VP for econ @ CSIS, ’21** (Matthew P. Goodman, “Toward a T12: Putting Allied Technology Cooperation Into Practice”, CSIS, <https://www.csis.org/analysis/toward-t12-putting-allied-technology-cooperation-practice>, Accessed 6/27/22; Analina)

The growing interest in technology cooperation among the United States and its allies stems from both the nature of emerging technologies and shifts in the relative capabilities of key global players. Technologies such as artificial intelligence (AI) and biotechnology are dual use, meaning in the broadest sense that they have the capability to do good and to do harm. For example, new genomic coding techniques were instrumental in developing a Covid-19 vaccine; however, the same technology can be used to develop another dangerous disease. In an international policy context, these and other emerging technologies are considered dual use in that they have both commercial and military applications. The United States and its allies have a shared interest in ensuring that the benefits of dual-use technologies are maximized and the risks mitigated or managed. More generally, allies have an interest in minimizing threats to an open internet and digital connectivity, such as intellectual property theft or cyberattacks.

The other driver of increased interest in allied technology cooperation is the fact that the United States no longer holds an unrivaled lead in the development and deployment of critical technologies. This is partly the result of underinvestment in the traditional foundations of U.S. innovation—such as infrastructure, federal research and development (R&D), relevant education and skills—and partly due to rising capabilities in other countries. In 2020, the United States ranked ninth behind European and Asian competitors in Bloomberg’s global innovation index. Japan, South Korea, Taiwan, and the Netherlands have joined the United States as critical players in semiconductor manufacturing. China, Europe, Canada, and Israel all have formidable capabilities in AI and biotech. And the global telecommunications equipment market is dominated by two Chinese and two European suppliers; the United States has no integrated-hardware suppliers in a sector that forms the backbone of today’s digital economy.

### NATO key – security coop

#### NATO is key – historically preferred forum, preexisting framework for security cooperation

James B. Steinberg ‘3, “An Elective Partnership: Salvaging Transatlantic Relations,” BROOKINGS, https://www.brookings.edu/wp-content/uploads/2016/06/steinberg20030601.pdf

The debate over the mechanism of cooperation has centred around whether NATO, suitably adapted, should continue to be the favoured forum or whether new approaches are necessary, to reflect changes within Europe and the world. Those who favour retaining NATO as the key institution of cooperation focus on five arguments. First, they point to the long history of NATO not simply as a place to discuss anti-Soviet military cooperation, but as the preferred forum for consultation among democratic governments on a range of political challenges. Second, they note that it is a forum where all members come together as independent and equal states, with no internal ‘caucus’ that excludes some from policy deliberation. Third, they argue that the expansion of NATO, along with close ties with Russia and other non-member states means that all the key actors are present within the institution broadly defined. Fourth, they assert that while the political dimensions of security challenges may be growing in importance, military cooperation will continue to be essential in meeting many of these new challenges, as the conflict in Afghanistan and war with Iraq (not to mention lesser contingencies, like Sierra Leone or the Ivory Coast) make clear. Only NATO has the kinds of mechanisms – including command structures, common operating principles and shared assets – that can make on-the-ground military cooperation effective.

### NATO solves – COVID proves

**NATO Solves Biotech threats, past empirics proves**

**De Maio, 20** (Giovanna De Maio, Giovanna De Maio was a nonresident fellow in the Center on the United States and Europe at Brookings., 10-28-2020, accessed on 6-25-2022, Brookings, "NATO’s response to COVID-19: Lessons for resilience and readiness", <https://www.brookings.edu/research/natos-response-to-covid-19-lessons-for-resilience-and-readiness/#:~:text=In%20spite%20of%20this%2C%20NATO,health%20crisis%20from%20impacting%20readiness,acessed> 22-6-15)-JLI

With the outbreak of COVID-19 pandemic, for the first time in its history NATO had to face an attack against each of its member states at once. Given the backdrop of political tensions within the alliance in the past few years, there were not many reasons to be optimistic about NATO’s response, especially at a moment when trans-Atlantic allies were failing to coordinate on travel restrictions and competing over supplies of medical equipment. In spite of this, NATO was able to leverage its experience in crisis management and disaster relief to provide two kinds of responses.

First, NATO focused on ensuring the continuity of its operations while protecting its personnel, to prevent the health crisis from impacting readiness. Most NATO missions were preserved, but some encountered temporary suspensions. Military drillings were redesigned, including the U.S.-led NATO exercise DEFENDER-Europe 20, to prevent further spread of the virus through movement of ground troops. In addition, NATO’s public diplomacy branch multiplied efforts to counter disinformation from China and Russia.

Second, amidst a low point for international cooperation, NATO set up a COVID-19 Task Force aimed at coordinating the delivery of medical aid across and beyond the territory of the alliance. Such actions, although performed through the means of NATO member states and relatively limited in scope, were an important testimony of the reactive capability of the alliance and of solidarity between member states. Yet, it is reasonable to imagine that more could have been done if the organization did not have to overcome political tensions across the Atlantic, and member states had cooperated from the beginning under the leadership of NATO’s strongest member.

From this experience NATO could draw important lessons, from improving resilience to external threats to investing in readiness for catastrophic scenarios like a global pandemic. The fact that COVID-19 will continue disrupting the global economy and supply chains will have a negative impact on countries’ defense spending and defense industries. However, given the resilience the alliance has shown so far, COVID-19 will not be the determining factor for the future of NATO. Instead, the chances for NATO to operate efficiently vis-à-vis growing global challenges will ultimately depend on a relaunch of trans- Atlantic relations.

## 2AC

### 2AC EU CP

#### Innovation fails without transatlantic cooperation. And EU leadership on biotech backfires, turning their net benefit

**Giddings 22-** senior fellow at the Information Technology and Innovation Foundation (ITIF).(Val. “Prospects for Transatlantic Cooperation in Biotech Policy- A US Perspective”. *Information Technology and Innovation Foundation,* March 11, 2022, <https://itif.org/publications/2022/03/11/prospects-transatlantic-cooperation-biotech-policy-us-perspective/)//zd>

A WORLD OF BIOLOGICAL POSSIBILITIES

Mutual self-interest provides a strong basis for transatlantic cooperation in biotechnology based on shared recognition of its vast potential to provide solutions to some of civilization’s most pressing problems. Thanks to explosive advances in our understanding of the many ways in which promiscuous nature has been manipulating DNA and RNA for the past billion years, it is widely anticipated that the 21st century will belong to biology.1 We are now at the point where our ability to innovate is constrained less by technical capability than by the limits of our imaginations. Multiple laboratories and companies on both sides of the Atlantic (and throughout the world) are pursuing promising applications, and experience confirms progress would be accelerated by cooperative approaches. But there are some considerable challenges, especially in agricultural and industrial contexts.

The most important rate-limiting factor in our ability to harness biological innovations to the challenges of feeding the world, sustaining human and environmental health, and addressing climate change, is the burden imposed by ill-considered regulations. Unless this bottleneck can be unblocked, the enormous potential for transatlantic scientific cooperation will not yield the necessary fruits.

DIVERGENT REGULATORY PATHS: PRECAUTION VS. OPENNESS TO INNOVATION

Existing policies, legislation, and regulations do little or nothing to advance human or environmental safety.2 Born out of understandable caution at the dawn of recombinant DNA technologies, today their most obvious impact is to obstruct and discourage research, development, and deployment of innovative solutions to various challenges.3 This is so despite an abundant record of production and consumption of new biotech products with enviable records of improved safety, superior sustainability, and widespread beneficial economic impacts.4 The benefits are so substantial that a pattern has emerged of farmers breaking the law to acquire and plant improved seeds in countries where governments have lagged in allowing access.5

It is one thing to implement policies and regulations ostensibly designed to ensure safety; it is quite another to ignore vast data and decades of experience around the world to maintain obsolete policies and regulations that add nothing to safety or sustainability, but only impede our ability to use the most innovative, precise, and safest tools to address our gravest challenges.6

In terms of regulatory policy and openness to biological innovations, the width of the Atlantic might be measured better in light years than miles or kilometers. As imperfect as regulations for the products of biotechnology are in North America, they are simply indefensible in Europe.7

The United States decided in 1986, after years of study and consultation, that no new laws were required to ensure the safety of crops and foods improved through biotechnology. This was based on the finding that they present no novel hazards, and foreseeable risks of their development and use fall into categories with which humans have considerable experience from millennia of conventional plant and animal breeding.8 The United States therefore decided to regulate these novel products under existing authorities administered by the Department of Agriculture, the Food and Drug Administration, and Environmental Protection Agency.9 While implementation of this policy, the “Coordinated Framework,” has been far from perfect, it has been sufficiently predictable and science-based to enable an explosion of innovation, new product development, and commercial activity. Consequently, the United States has led the world to the present day wherein crops improved through biotechnology are now the global standard for quality seeds, delivering improved yields, safety, sustainability, and economic productivity around the world, with the lion’s share of benefits accruing on behalf of small farmers in developing countries.10 Europe took a different approach.

It is one thing to implement policies and regulations ostensibly designed to ensure safety; it is quite another to ignore vast data and decades of experience around the world to maintain obsolete policies and regulations that add nothing to safety or sustainability.

The European Union decided to regulate seeds improved through biotechnology as a novel class governed under new regulations specifically focused on an arbitrary category known as “GMOs” (for “genetically modified organisms”). The conceit was that because they represented gene combinations produced by mechanisms supposedly “not found in nature” (but actually ubiquitous) they must present novel hazards, even though none has ever been identified. These putatively novel hazards, despite the lack of any concrete manifestations, allegedly required dedicated, specific, “precautionary” regulations. The resulting regulatory regime proved so burdensome it led to the general collapse of agricultural biotechnology in Europe, which had played a leading role in its discovery and invention. Permissions for field trials proved almost impossible to obtain, products could not be developed and brought to market, academic labs abandoned the field, and the industry relocated most of its assets and activities to the Americas. And Europe became the world’s largest importer of commodity foods improved through biotechnology, only recently surpassed by China.

OPPORTUNITY FOR TRANSATLANTIC COOPERATION

Many scientists in the EU (and around the world) knew from the beginning that this was the wrong approach, yet the EU pushed its model internationally, with aggressive diplomacy, leading to emulation by many countries in the developing world, with equally unhappy results to those seen in Europe.11 But a growing number of scientists, policymakers, and even “green” NGOs that had originally opposed GMOs, now recognize the counterproductive results of this approach and are working to avoid repeating the same mistakes with gene editing. This shines a spotlight on the most important and potentially fruitful opportunity for transatlantic cooperation in biotechnology: the revival of science-based regulatory regimes in which the degree of regulatory oversight is proportional to the hazards involved, and regulation that enables, rather than discourages the safe development of innovative products. A return to and reaffirmation of these first principles would provide fertile ground for cooperation and coordination globally. Regulatory reform (everywhere, not just in the EU and its emulators, though the need is greatest there) provides fertile ground for transatlantic cooperation and coordination. We have robust models of proven approaches.12 Without such cooperation, other progress in developing and deploying innovative solutions through biotechnology will be impeded or foregone.

As to national security risks, just as with other risks, novelty attributable to biotechnology is elusive. One can do very nasty things with conventional bioweapons, and they are easily magnified with recombinant DNA techniques. At the same time, defensive capacities are also buttressed by biotechnology, as demonstrated by the rapid development of mRNA vaccines against SARS-CoV-2. There has been some good work done in this area, but this topic is worth exploring at greater depth. The OECD has a track record of thoughtful analyses with such topics. One possibility would be to build on that foundation by establishing a joint OECD/NATO working group to serve as a forum.

### 2AC DA – trade-off

#### NATO already working on new technologies, no tradeoff of resources

NATO Parliamentary Assembly, 22 (5/10/2022, “STRENGTHENING ALLIANCE S&T RESILIENCE,” NATO Parliamentary Assembly, p. 11https://www.nato-pa.int/download-file?filename=/sites/default/files/2022-05/023%20STC%2022%20E%20-%20ST%20RESILIENCE%20-%20GHANI%20REPORT\_0.pdf, accessed 6-25-2022, , FLC)

38. Defence innovation is crucial to maintain NATO’s technological edge. Since 2018, the Alliance has stepped up its efforts regarding EDTs. The Emerging and Disruptive Technologies Roadmap identified seven critical technologies: AI and machine learning; big data; autonomy; hypersonics; space technologies; quantum computing; and biotechnologies (Soare, 2021). In 2021, Allies decided to add “Energy and Propulsion” as well as “Novel Materials and Advanced Manufacturing” to this list of relevant technologies. NATO’s Innovation initiatives are coordinated by the Innovation Board, which is chaired by the Deputy Secretary General. Moreover, the NATO 2030 process translates the effort to “future proof” the Alliance regarding technological competition (Soare, 2021). Under NATO 2030, Allies agreed on the establishment of a NATO Innovation Fund and DIANA, NATO’s Defence Innovation Accelerator for the North Atlantic, which was launched in April 2022 (NATO (a), 2022).

#### NATO tech collaboration strengthens resilience

Kallenborn 6-23-22 {“Can a Focus on Innovation Save NATO?” Zachary Kallenborn (Zachary Kallenborn is an author and analyst who specializes in WMD terrorism, unmanned systems, drone swarms, and homeland security. Zachary is a Policy Fellow at the Schar School of Policy and Government, a Research Affiliate with the Unconventional Weapons and Technology Division of the National Consortium for the Study of Terrorism and Responses to Terrorism (START), an officially proclaimed U.S. Army "Mad Scientist," and a Senior Consultant at ABS Group.). The National Interest. Published June 23, 2022, Accessed June 27, 2022. https://nationalinterest.org/blog/techland-when-great-power-competition-meets-digital-world/can-focus-innovation-save-nato-203158 } – TW

What Should Be Done? Three core tasks have traditionally defined NATO’s activities: collective defense, collective security, and crisis management**. NATO should add a fourth: collective resilience through innovation. The aim of the new core task would be to prioritize NATO’s capacity to innovate and learn, and in so doing, bind states more tightly together as an alliance. This task would aim to expand and strengthen existing NATO efforts like the NATO 2030 Initiative to ensure innovation remains a key part of the alliance, not just until 2030, but until 2100. What’s more, it offers specific paths to realize the commitments NATO members made in the 2021 Brussels Summit Communique to strengthen NATO as an organizing framework, enhance resilience, foster technological cooperation, and strengthen NATO capacity building. The starting point for innovation is expanding research and development collaboration**. NATO recently started a Defense Innovation Fund and a Defense Innovation Accelerator for the North Atlantic (DIANA). The forty-seven test centers and nine accelerators under DIANA need to be integrated as a permanent feature of the alliance as a whole, which means codifying how the accelerator sets priorities, how research results are disseminated, and how research findings support other NATO activities. **NATO should also go beyond the accelerator to encourage and enable the creation of more bilateral and multilateral research agreements and general memorandums of understanding on research cooperation.** But that’s just the start. How militaries use technology is often more important than the technology itself. France and Germany’s use of tanks during World War Two is a good illustration. Although France and Germany developed tanks with similar capabilities, they used them in different ways, to very different effects. French tanks were mostly an augment to infantry forces, while Germany built its entire blitzkrieg strategy around tanks, linking them together with new radio and other communications technologies. New NATO centres of excellence focused on various disruptive technologies can help with this by better educating NATO members about these technologies and supporting doctrine development, interoperability, and testing and validating concepts. NATO should launch a “War Game 2030 Initiative” to identify, experiment with, and evaluate new concepts for employing technologies and considering the ways adversaries might employ them. NATO could hold alliance-wide competitions to assess different answers to common defense questions such as: what combination of unmanned and manned systems are most effective in amphibious assault missions? Winners would earn points of military pride for their country and contribute to the alliance in ways beyond simple defense spending metrics. In addition, NATO should explore new ways to conduct war games, especially through the use of synthetic environments. NATO might partner with non-traditional stakeholders like video game designers and eSports leagues to draw on their experience in making realistic, dynamic war gaming environments. **NATO has thirty members. That’s a lot of opportunities for cooperation. In fact, there are 435 possibilities for bilateral cooperation, with possibilities including everything from Albanian ties with Belgium to joint United Kingdom and American cooperation. NATO should establish a NATO diplomatic corps to help identify opportunities for interstate collaboration and support collective NATO diplomatic goals. NATO diplomats could be stationed at each NATO member state, critical non-NATO partners and rivals, and international organizations like the European Union. NATO diplomats could also help advance common NATO positions around emerging international treaty issues like the Treaty for the Prohibition of Nuclear Weapons and calls to ban autonomous weapons. This would differ from existing defense attaches and inter-state diplomacy in that NATO diplomats would represent collective NATO interests, not just national interests. The North Atlantic Council and the NATO Military Committee require consensus between member states**. Innovation can be tough when thirty member nations need to agree to it. And even tougher if more nations join. To that end, NATO should establish a fast-track option to allow the North Atlantic Council and the Military Committee to make decisions based on strong majorities (e.g., 60 percent or 75 percent agreement) in specific circumstances. For example, NATO might agree to deploy assets in a conflict on a consensus but allow certain details to be agreed upon by a majority. Of course, states who own those assets may be required to sign off on any decision or receive greater voting weight, which would give greater influence on the details of employment. This would streamline and improve NATO decision-making so that NATO decisions are not always the lowest common denominator. Likewise, a majority decision-making mechanism would also allow greater opportunity to sanction member nations for not upholding the common democratic values of the alliance. The NATO diplomatic corps and updated NATO military committee would also serve a defensive role in insulating the alliance from adversary information attacks. Mis-, dis-, and malinformation complexify alliance decision-making, as they may strengthen voices opposed to NATO decisions or voices opposed to NATO as an institution. That can be a major challenge, given that the North Atlantic Council requires decisions to be made by consensus. If one member opposes the decision, the whole process is stymied or at least delayed. The NATO diplomatic corps could help counter those effects by representing common NATO interests to member states. That could include advocacy for common NATO positions, supporting greater burden-sharing efforts, and finding and encouraging new ways to tie NATO members together. Likewise, a non-consensus NATO Military Committee would not require all alliance members to agree. If one NATO member, due to a combination of information attacks and other reasons, opposes a decision, the alliance can still make decisions. The alliance could be further strengthened through innovative approaches to thinking about shared infrastructure and resources. NATO members have common dependencies on logistics routes, energy infrastructure, communication systems, and supply chains for components used in common defense systems. There are undoubtedly many more. NATO could draw upon functions-based approaches pioneered in member states, such as the National Critical Functions (NCF) framework in the United States or the Swedish Critical Societal Functions. Such approaches could reveal alliance-wide or multinational infrastructure dependencies—and therefore vulnerabilities—that could be targeted by cyber or physical attacks in the event of major conflict. These activities and the lessons that come out of them need to be baked into the alliance in the long term. That is where education comes in. NATO could create a new NATO War College, providing post-graduate training to NATO officials on the cusp of senior service. The War College would train the future of NATO’s leadership with a unique focus on multinational military operations, diplomacy, and business-oriented education on discovering and leveraging competitive advantages. The War College would fill a gap between the NATO school and the NATO college by providing longer, in-depth educational programs. A brick-and-mortar NATO War College would also help bind the alliance together. The wars in Afghanistan and Iraq afforded NATO officers the opportunity to work closely together and get to know one another as people. While the withdrawal from Iraq and Afghanistan were correct policy decisions, the loss of those opportunities comes with a cost. Future disagreements and even crises between NATO members are inevitable—just see the disagreements between Italy and Turkey over Libya. Common educational experiences can help build the trust and mutual understanding needed to diffuse disagreements without escalation. Working with another NATO officer is much easier when one has broken bread, clanked foamy glasses of beer, and traded embarrassing stories. **Altogether, these developments aim to strengthen NATO’s ability to fight while also binding NATO members more closely together. Moreover, they would create new opportunities for NATO members to contribute. A NATO member might be hesitant to increase defense spending but willing to support NATO diplomatic and research activities**. Winning NATO-wide war games or research competitions should also be an important point of national and alliance pride. The value of a transformative military concept cannot easily be measured in dollars or euros, but it would create tremendous value for the alliance’s military forces. NATO’s Future Global security is undergoing drastic changes, from the rise of China to the opening of the Arctic and the growing importance of cyberspace, outer space, and artificial intelligence. Some thinkers ponder whether the globe is experiencing a revolution in military affairs. In some ways, the changes today are not new—they are reflections of trends built over the last decades, if not centuries. After all, just over a hundred years ago, the Ottoman empire was still dominant, air power was just emerging, and cyberspace and space warfare wasn’t even a glimmer. But that’s the point. **NATO must be ready for whatever changes emerge.** Some projected trends may manifest; others may not. **Others may manifest in different ways than expected, and other trends that were never expected may manifest. Adopting collective resilience through innovation as a core task would allow NATO to maintain and encourage the technological, conceptual, doctrinal, strategic, and policy flexibility needed to stay strong and endure whatever future may emerge.** Note: The author is contract-support to the NCF team at CISA, and this does not necessarily represent the CISA position. This paper and a larger study expanding on the ideas was developed as part of West Point’s “NATO Strategic Concept Seminar.” Thank you to Sam Bendett, Linde Desmaele, Mark Laity, Jennifer McArdle, Jeff Reynolds, Peter Singer, Stan Sloan, Paul Stockton, David Strachan, Ian Sullivan, and attendees of the seminar who helped develop these ideas.

# NEG

## Bioterror neg

### No biotech theft

#### Lab security is thorough and effective

Chamlee ‘17, Interviewing Damon, 17 Virginia Chamlee, interviewing Inger K. Damon, MD, PhD, the director of the CDC's Division of High-Consequence Pathogens and Pathology, incident commander for the CDC Ebola Response. [This Is What It’s Like to Work with The World's Deadliest Pathogens Every Day, 6-19-2017, https://www.buzzfeed.com/vchamlee/this-is-what-its-like-to-work-with-the-worlds-deadliest]

Entering a BSL-4 lab requires typing in a unique key code, undergoing an iris scan, and removing all personal clothing, jewelry, and accessories (with the exception of eyeglasses). Next, workers don clothing for the lab: a scrub suit, socks, and inner gloves. Then comes the "spacesuit” — i.e., a full-body, positive-pressure biosafety suit, which Damon said “pushes air out to prevent anything from coming in.” A 2007 photo of the BSL-4 lab &quot;spacesuits.&quot; The suits the scientists currently wear are white instead of orange, and have white boots and black gloves. CDC / Via phil.cdc.gov A 2007 photo of the BSL-4 lab "spacesuits." The suits the scientists currently wear are white instead of orange, and have white boots and black gloves. The suit is so large it adds a solid two to three inches to anyone’s height, thereby restricting movement and making laboratory work even more difficult than it is already. With no air coming in, it also creates a dehydrating environment — which is not necessarily a bad thing, considering how difficult it would be to take a bathroom break. The lab’s security features read like something from Mission: Impossible, specially engineered to prevent microorganisms from being disseminated into the environment. The walls are made of thick, solid concrete, designed to maintain pressure differentials and withstand natural disasters. In essence, they form a sealed internal shell — “to facilitate fumigation and prohibit animal and insect intrusion,” according to the CDC. Floors are designed with a watertight seal. Laboratory furniture is simple, void of sharp corners, and covered in a nonporous material to allow for easy decontamination. Windows (if there are any) are shatter-resistant and sealed. Eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption is, perhaps unsurprisingly, entirely off-limits. No phones are allowed inside the lab, but there is a computer from which scientists can access emails and files (though they’d have to do so wearing gloves that make typing a challenge). With the exception of the scientists themselves, who enter and exit the lab each day, nothing can get out. With no air coming in, it also creates a dehydrating environment — which is not necessarily a bad thing, considering how difficult it would be to take a bathroom break. “Any way the virus could potentially escape, there are at least two ways to prevent that from happening,” Damon told BuzzFeed. “The samples are kept in biosafety cabinets, there’s negative pressure in the room, doors are airtight and gasketed. There are multiple ways that, when air is coming out of the lab, it’s then purified and cleaned. And any waste products generated in the lab are autoclaved [i.e., placed into a pressure chamber to sterilize medical waste] and incinerated.” Upon leaving the lab, workers step into a decontamination chamber, which showers a mix of chemicals over their suits to decontaminate anything that may be on the surface. From the chemical shower, they go through an inner changing room, where they take off the suit and everything worn beneath it. The clothing worn in the lab under the spacesuit is treated as a potentially contaminated material, and thoroughly decontaminated before being laundered. Next, lab workers must take a personal shower before entering an outer changing area, where they can then dress into street clothes.

### Biotech not key to weapons

#### Biotech won’t be used for weapons or terrorism

Cross 21 (Glenn A. Cross, Founder of the Crossbow Analytics LLC, which focuses on Chemical Bioweapons; is a member of the Bulletin of the Atomic Scientists, “*BIOLOGICAL WEAPONS IN THE ‘SHADOW WAR’*” [https://warontherocks.com/2017/08/long-ignored-the-use-of-chemical-and-biological-weapons-against-insurgents/] Accessed 6/25/22, TR)

The **threat** of terrorists using biological agents exists but is very limited. The fear of nonstate actors using biological agents rose with Aum Shinrikyo’s 1995 failed efforts to spread botulinum and anthrax in Japan. Fears of bioterror reached its most recent crescendo with the 2001 anthrax letter mailings, coming as they did within weeks after the 9/11 attacks. The threat of further bioterror attacks, however, never materialized.

Despite the fact that terrorist biological weapons attacks have not materialized since the Amerithrax scare, some continue to argue that the supposed ease and lower cost of biological weapons development, production, and use along with the societal disruption of COVID-19 has incentivized bad actors to adopt biological weapons. These concerns have been echoed by others who assume that misuse is inevitable and following the COVID-19 example will result in mass casualties and crippling political, societal, and economic repercussions.

However, the bioterror threat seems to have **diminished** — not grown — since the 2001 Amerithrax letter mailings. The core al-Qaeda biological weapons efforts were first envisioned in the late 1990s and began in earnest shortly afterward. Yet the U.S. invasion of Afghanistan and the fall of the Taliban in late 2001 effectively disrupted al-Qaeda’s biological weapons work which largely centered on anthrax. Left without a suitable safe haven, al-Qaeda was never able to reconstitute its biological weapons efforts. The Taliban’s return to power in Afghanistan, however, may result in a reemergence of al-Qaeda and its biological weapons ambitions. Time will tell whether the Taliban now will grant safe haven to al-Qaeda that could be used for biological weapons work. What is undoubted is that the Taliban and al-Qaeda have a shared history and have continued to work closely together. Without a presence in Afghanistan, U.S. intelligence will have a more difficult time detecting any resurgent al-Qaeda biological weapons efforts.

The threat of a biological weapons effort by the Islamic State in Iraq **never materialized**, although the group did manage to produce and use chemical weapons agents until that program was effectively disrupted. Other terrorist groups’ interest in biological weapons has been rudimentary with a focus predominately on toxins such as ricin and botulinum. U.S. domestic extremists, self-radicalized individuals, and lone actors also have gravitated toward ricin, but no known casualties have resulted from the decades-long interest in ricin.

Some analysts, however, argue that the life science revolution and global proliferation of related scientific and technical capabilities has opened a Pandora’s Box of biothreats. The argument goes that the rapid revolution in genetic engineering — including synthetic biology — the DIY bio movement, and the advent of technologies like CRISPR (acronym for “clustered regularly interspaced short palindromic repeats”) makes their misuse likely. However, as noted in the 2018 National Academies of Science report, Biodefense in the Age of Synthetic Biology, the large-scale production and delivery of biological weapons agents is **inherently difficult**, with biological weapons use favoring small-scale, highly targeted attacks.

### Bioterror defense

#### Biotech doesn’t risk bioterrorism – overstated capacity, only states can do it

Hamilton et al2021 (R. A. Hamilton United Nations Interregional Crime and Justice Research Institute (UNICRI), Turin, Italy R. Mampuys Netherlands Commission on Genetic Modifcation (COGEM), Bilthoven, The Netherlands S. E. Galaitsi (\*) US Army Corps of Engineers, Concord, MA, United States A. Collins EPFL International Risk Governance Center, Lausanne, Switzerland I. Istomin Schaffhausen Institute of Technology (SIT), Schaffhausen, Switzerland M. Ahteensuu University of Turku, Turku, Finland L. Bakanidze EU CBRN CoE Regional Secretariat for Central Asia, Tashkent, Uzbekistan) “ Opportunities, Challenges, and Future Considerations for Top-Down Governance for Biosecurity and Synthetic Biology,” CONFERENCE PAPER, <https://link.springer.com/chapter/10.1007/978-94-024-2086-9_3> (Accessed 6-27-22)-AO

In relation to existing top-down governance measures for biosecurity, synthetic biology represents a promising yet potentially destabilizing advancement in the life sciences, one that could introduce new risks and regulatory challenges. In particular, a number of high-profle synthetic biology experiments, ranging from the de novo synthesis of poliovirus (Cello et al. 2002) to the recent synthesis of horsepox virus (Noyce et al. 2018), have raised concerns that the same techniques could be exploited to bypass regulatory controls (e.g. the United States, US, Select Agent Regulations) on lists of high-risk pathogens. Moreover, the possibility of synthesizing novel ‘taxonomically unclassifed’ pathogens (NSABB 2006; Garfnkel et al. 2007) has led some to question the logic and utility of current ‘list-based’ approaches to regulation. Looking to the future, if synthetic biology does, in fact, ‘deskill’ the ‘art’ of biological engineering, new regulatory approaches could very well be essential because the tools of modern biology will be widely accessible to both responsible and malicious actors. Claims about synthetic biology’s potential, like other emerging technologies, nonetheless tend to overstate its ‘enabling’ capacity. Likewise, the ease of producing biological weapons tends to be overstated. As a number of commentators note, biology is not yet easy to engineer (Jefferson et al. 2014) and, for the foreseeable future, the skills necessary to produce biological weapons are likely to remain only within the grasp of states (Piers Millet in Regalado 2016). However, the feld’s emphasis on eliminating technical barriers and reducing the importance of tacit knowledge (Oye 2012) represents a powerful source of expectation for advocates and critics alike. For advocates, it represents the possible realization of modern biology’s full potential, one that could yield revolutionary advances in health, medicine, and industry in the twenty-frst century. For critics, it represents a seemingly openended risk that requires exceptional precaution. For national governments, and international conventions responsible for establishing global biosecurity norms and obligations that are operationalized at the national level  through legislation and other regulatory tools (McLeish and Nightingale 2007), a central question is how (if at all) does top-down biosecurity governance need to change in response to synthetic biology?

#### Non-State actors fail to develop biological weapons

Parachini, Former director of RAND, and Gunaratna, 22

Parachini, J. V., & Gunaratna, Rohan Kumar. (2022, May 31). *Implications of the Pandemic for Terrorist Interest in Biological Weapons: Islamic State and al-Qaeda Pandemic Case Studies*. Rand.org; RAND Corporation. <https://www.rand.org/pubs/research_reports/RRA612-1.html>, accessed 6/25/22, , FLC

‌Some policymakers and analysts have expressed concern that weaknesses in responses to the coronavirus disease 2019 (COVID-19) pandemic will motivate terrorists to seek biological weapons. However, an examination of the Islamic State (IS) and al-Qaeda narratives about the pandemic reveals no causal relationship between the pandemic and any heightened interest in biological weapons. A review of the historical pursuit of biological weapons by the IS and by al-Qaeda reveals that both groups evinced some interest, but ultimately each employed conventional forms of attack instead. Despite limited IS use of chemical agents that challenged the taboo against the use of poison as a weapon, there are formidable hurdles that nonstate actors must clear to develop, produce, and use biological agents as weapons.

Although the prospect of the IS and al-Qaeda pursuing biological weapons is not zero, it is unlikely, given both the difficulties and the much easier and readily available alternatives that meet their deadly objectives. In the wake of the pandemic, several measures can enhance capabilities to address both public health and military challenges. These measures reduce the possibility of and improve the response to a future naturally occurring pandemic while also helping to deter, prevent, and respond to any possible terrorist acquisition and use of biological weapons. Focusing unduly on the potential, but unlikely, terrorist use of biological materials as weapons skews resources to unique military and counterterrorism measures and away from measures that are useful in both events. In the post-pandemic period, governments need to rebalance their efforts.

Key Findings

Looking at both the historical baselines and the pandemic-era narratives of the IS and al-Qaeda, neither group seems likely to use biological materials in future attacks as a consequence of the global COVID-19 pandemic

It is unlikely that an actor with only modest knowledge can access the necessary materials and fashion a biological weapon.

The prospects of an individual or a group successfully accomplishing all the necessary steps are not zero, but given the difficulty involved in developing such weapons and the fact that conventional weapon alternatives are readily available, nonstate actors have routinely chosen other means of attack.

Even such terrorist groups as the IS and al-Qaeda, which have not hesitated to commit terrible acts of violence, have not demonstrated a concerted effort to develop biological weapons, and their chemical weapon activities have thus far been much less deadly than their conventional weapon attacks.

COVID-19 and the effects of global climate change are stern prompts to reimagine threats to national and international security

Prioritizing threats is a difficult task, particularly when threats are novel.

Although individuals and reports issued warnings about the possibility of a pandemic, other near-term or long-feared postulated threats took precedent.

Slow-moving and naturally occurring events rarely get the same attention as hostile states or terrorist groups, and feared “bolt from the blue” attacks from states or terrorists have tended to dominate the thinking of political leaders and national security experts.

## China neg

### China not rising fast enough

#### U.S. already has the biotech edge, not falling behind in terms of competitiveness

Scott Moore ’21, February 17, a lecturer in political science at the University of Pennsylvania and previously served at the U.S. Department of State, where he worked on the Paris Agreement, “In Biotech, the Industry of the Future, the U.S. Is Way Ahead of China,” LAWFARE, https://link.springer.com/content/pdf/10.1007/978-94-024-2086-9.pdf

It was supposed to be China’s moment of technological triumph—one that would show the world Beijing had not only conquered the coronavirus but also emerged as a biotechnology superpower. But when clinical data on China’s flagship CoronaVac vaccine finally flowed in, they showed it was barely more than 50 percent effective—just clearing the minimum standard set by the World Health Organization. In contrast, not one but two vaccines developed by U.S. firms have been found to be upward of 95 percent effective, a standard no other country’s vaccines have yet met in rigorous clinical trials. The United States’s overall track record in responding to the pandemic has been awful. Yet the success of its vaccine development efforts shows that when it comes to biotechnology, the industry of the future, the U.S. is way ahead of China and most of its other rivals.

A continuing refrain from Washington in recent years has been that the United States is falling behind China in the development of critical emerging technologies. In some fields, this may be true. But not in biotechnology. To be sure, China’s biotech sector is growing at a torrid pace, and some of its firms are becoming leaders in certain areas, such as cancer treatment. Yet the U.S. retains a dominant position in research, development and commercialization, accounting for almost half of all biotech patents filed from 1999 to 2013. The triumph of its biotechnology industry during the coronavirus pandemic, producing two highly effective vaccines using an entirely new approach based on messenger RNA, and in record time, shows that the U.S.’s competitive edge in biotechnology remains largely intact. And that has important implications as Washington gears up for a sustained period of geopolitical competition with Beijing.

### China coop not conflict

#### Biotechnology will produce US-China cooperation, not conflict

Moore and Coplin ’22, April 8. Scott Moore is Director of China Programs and Strategic Initiatives and Lecturer in Political Science at the University of Pennsylvania, where he teaches Chinese politics, Abigail Coplin is an Assistant Professor of Sociology and Science, Technology, and Society at Vassar College. Her research analyzes the development of China’s biotechnology and agrobiotechnology. “Closing the U.S. to Chinese Biotech Would Do Far More Harm Than Good,” CHINA FILE, <https://www.chinafile.com/reporting-opinion/viewpoint/closing-us-chinese-biotech-would-do-far-more-harm-good>; Analina

Yet at the same time, Washington and Beijing have good reasons to see certain areas of biotechnology as grounds for cooperation rather than conflict or competition. The most advanced areas of biotechnology, like gene editing and synthetic biology, are double-edged swords. They show great promise to help cure chronic diseases and develop drought-resistant crops, but also to create dangerous new viruses, human genetic modifications, and even genetically-engineered terrorism. The risks and threats posed by these emerging biotechnologies cannot be confined to any one country. Potentially dangerous biotechnology research can be undertaken virtually anywhere, meaning that all countries need to develop and enforce rules preventing research that could create new viruses or bioweapons, for example. China is an especially important player in international biosafety and biosecurity, and the country’s 2020 legislation on both topics is, on paper at least, among the most stringent in the world. Gene therapy trials based on somatic editing are underway in both the U.S. and China, and as researchers in both countries begin to tinker with the fundamental building blocks of life, engagement on the use of these groundbreaking, but potentially dangerous, technologies is needed both to ensure transparency as well as to begin the difficult process of establishing mutually-agreed rules and norms.

### China hegemony defense

#### Chinese hegemony has structural limitations

Andrew Nathan '22, March/April, Class of 1919 Professor of Political Science at Columbia University, "A Rival of America’s Making? The Debate Over Washington’s China Strategy," FOREIGN AFFAIRS, https://www.foreignaffairs.com/articles/china/2022-02-11/china-strategy-rival-americas-making

The country’s geographic position is also unfavorable. Along its land and sea borders, China confronts distrustful neighbors. Among them are seven of the 15 most populous countries in the world (India, Indonesia, Japan, Pakistan, the Philippines, Russia, and Vietnam) and five countries with which China has fought wars within the past 80 years (India, Japan, Russia, South Korea, and Vietnam). None of China’s neighbors is culturally Chinese or ideologically aligned with the Chinese Communist Party. All may cooperate with China at various times and to varying degrees for strategic or economic reasons, but all seek to hedge against Chinese domination, often by cultivating relations with the United States. As Chinese behavior has become more assertive, this counterbalancing behavior is growing more evident. India has compromised its traditional strategic autonomy in order to participate in joint military exercises with Australia, Japan, and the United States as part of the Quadrilateral Security Dialogue, known as the Quad. Japan has taken the unprecedented step of officially declaring stability in the Taiwan Strait to be a national interest. And Australia has reaffirmed its U.S. alliance by accepting help in acquiring nuclear-powered submarines under the 2021 AUKUS agreement. China is unlikely to achieve anything like hegemony over any but the smallest of its neighbors.

Geography helps explain another Chinese weakness: its lack of allies other than North Korea. There are countries that are nearby enough to receive substantial help from China in the case of a military conflict, but they all fear China more than they fear any other state. The lack of allies is more a liability than an asset, for it deprives China of ways to multiply the pressure it can put on uncooperative neighbors and of the ability to position sizable military forces around the world. To be sure, none of the United States’ 60-some allies and partners has interests identical to Washington’s. None can be counted on to follow every component of U.S. strategy toward China. But U.S. alliances and partnerships still complicate China’s military calculations, increase the pressure on Beijing to comply with the international norms preferred by other states, and expand the alternatives available to countries considering whether to accept Chinese investments.

Nor is the structural distribution of international power favorable to Chinese global dominance. Barring catastrophic mismanagement by other states, China will continue to face five powerful rivals—India, Japan, Russia, the United States, and the European Union—in a multipolar system that is not going to disappear. A unipolar moment, if one ever really existed, cannot be re-created, not by the United States and certainly not by China.

### China war defense

#### War with China won’t go nuclear

Andrew Nathan '22, March/April, Class of 1919 Professor of Political Science at Columbia University, "A Rival of America’s Making? The Debate Over Washington’s China Strategy," FOREIGN AFFAIRS, https://www.foreignaffairs.com/articles/china/2022-02-11/china-strategy-rival-americas-making

THREAT PERCEPTION

The challenge the United States faces from China is bad enough without exaggerating it. As realism would predict, Beijing is dissatisfied with the status quo: it is closely hemmed in by Washington’s allies, partners, and military forces; its supply lines are vulnerable to U.S. interdiction; and its society is influenced by American culture. China wants to push the United States away from its shores and weaken its alliances, and this means a real chance of conflict, especially over Taiwan. I agree with Mearsheimer that if such a war occurred, it would probably be a limited war, albeit highly destructive and tragic. I also agree that it would have the potential—not a great one, but more than zero—to escalate to a nuclear exchange.

But Mearsheimer is wrong to describe China’s determination to gain control over Taiwan as either “emotional” or “expansionist,” because these descriptors make China sound irrationally aggressive. Mearsheimer’s own theory of realism better explains why Beijing will not lose its appetite for Taiwan, given the long-standing legal basis of its sovereignty claim and the island’s strategic, economic, and technological importance to Chinese security. Also consistent with realism is China’s preference for avoiding a premature strike on Taiwan and instead deterring Taiwanese independence as long as it takes to achieve what Beijing calls “peaceful reunification.” But deterring Taiwanese independence has meant that China has had to build up military assets capable of threatening the aircraft carriers and forward air and naval bases that the United States has long relied on to stave off any attempt to take Taiwan by force. The result: a U.S.-Chinese arms race that raises the risk of war through miscalculation.

And Mearsheimer is wrong to describe Beijing’s goal as global dominance. In a multipolar world, China will seek to shape global institutions to its advantage, just as major powers have always done. But it has no proposal for an alternative, Beijing-dominated set of institutions. It remains strongly committed to the global free-trade regime, as well as to the UN and that organization’s alphabet soup of agencies. It participates actively in the UN human rights system in order to help its allies and frustrate its rivals. Its Belt and Road Initiative operates alongside, rather than in place of, long-standing Western-funded development programs. China seeks influence, but it has little prospect of dominance as long as other powers also stay active in these institutions.

Overestimating the China threat is just as dangerous as underestimating it. Hyping the hazard makes it harder to manage, by creating panic among both the American public and Chinese policymakers. Whether or not engagement was the mistake that Mearsheimer claims, whether or not there was ever an option to constrain China’s growth as he believes, we are where we are. I agree with Mearsheimer that what the United States must do now is manage the situation—which should mean not exacerbating what is already, on cold realist grounds, a serious challenge.

### Econ defense

#### Economic collapse doesn’t cause war

Daniel Drezner ’14, January, professor of International Law at Tufts, The System Worked: Global Economic Governance during the Great Recession, World Politics, Volume 66. Number 1, online

The final significant outcome addresses a dog that hasn't barked: the effect of the Great Recession on cross-border conflict and violence. During the initial stages of the crisis, multiple analysts asserted that the financial crisis would lead states to increase their use of force as a tool for staying in power.42 They voiced genuine concern that the global economic downturn would lead to an increase in conflict—whether through greater internal repression, diversionary wars, arms races, or a ratcheting up of great power conflict. Violence in the Middle East, border disputes in the South China Sea, and even the disruptions of the Occupy movement fueled impressions of a surge in global public disorder.

**The** aggregate data suggest otherwise, however. The Institute for Economics and Peace has concluded that "the average level of peacefulness in 2012 is approximately the same as it was in 2007."43 Interstate violence in particular has declined since the start of the financial crisis, as have military expenditures in most sampled countries. Other studies confirm that the Great Recession has not triggered any increase in violent conflict, as Lotta Themner and Peter Wallensteen conclude: "[T]he pattern is one of relative stability when we consider the trend for the past five years."44 The secular decline in violence that started with the end of the Cold War has not been reversed. Rogers Brubaker observes that "the crisis has not to date generated the surge in protectionist nationalism or ethnic exclusion that might have been expected."45

#### No diversionary war.

Elad Segev et al. ‘21. Tel Aviv University AND Atsushi Tago and Kohei Watanabe, Waseda University. "Could Leaders Deflect from Political Scandals? Cross-National Experiments on Diversionary Action in Israel and Japan". TAYLOR & FRANCIS, https://www.tandfonline.com/doi/full/10.1080/03050629.2022.2044326

The diversionary theory of war is one of the best-known conflict initiation theories focusing on democratic leaders’ incentives. According to the theory, democratic leaders who face greater electoral challenges, either due to political scandals or an economic downturn, are more likely to choose provocative foreign policies and seek to lead the country into diplomatic crises, in hopes of inciting nationalistic sentiments that will boost their approval ratings via the so-called “rally around the flag” effect (e.g. Gaines 2002; Hetherington and Nelson 2003; Mueller 1973).

Despite the intuitive appeal of this theory, empirical studies have been largely unable to find consistent evidence to corroborate the purported theoretical mechanisms. Findings from observational studies have been quite mixed. The fact that a diverse set of findings have been reported from observational studies suggests that unobservable confounders arising from strategic interactions greatly hinder our ability to tease out the causal effect of electoral hardship on conflict behaviors.

In this research note, we claim that the key assumption of the theory does not work as expected. That is, a political leader cannot divert attention from his/her political scandals by emphasizing a foreign threat and alerting the general public that the country may go to war against an enemy. Although the assumptions that the threat or use of force is salient and that an acute enemy threat would create a rally-around-the-flag effect are common, they have rarely been tested at a micro-level in an experimental setting. Our team conducted a cross-national experiment to find out whether and how political leaders could divert the public’s attention away from their political scandals.

### Nuclear war defense

#### Conflicts won’t go nuclear – use-it-or-lose-it is a fallacy

Kroenig, Mathew, Professor in the department of government at Georgetown, Winter 2021 (“Will Emerging Technology Cause Nuclear War?: Bringing Geopolitics Back In”, Air University, Winter, 2021, <https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15_Issue-4/D-Kroenig.pdf>, accessed 6/27/22, ,FLC)

There are several limitations, however, to the existing analysis. First, the underlying theory of nuclear conflict this body of thought advances is debatable. It rests heavily on the “use it or lose it” cause of nuclear war, but use it or lose it is rooted in the logical fallacy of the false dilemma.12 States have many options in a crisis other than suffering a disarming nuclear attack or launching one. Moreover, faced with a range of choices, the use-it-or-lose-it logic assumes a state will intentionally choose to initiate a nuclear war—the most risky and costly available option. The use-it-or-lose-it pathway to nuclear war, therefore, is in tension with mainstream nuclear deterrence theory that maintains states will be reluctant to conduct a deliberate attack on another nuclear-armed state.13

A second limitation of this approach is that theories of nuclear instability developed in the early days of the Cold War are in tension with current understandings of the causes of war in contemporary international relations theory. The nuclear stability framework rests on the notion that parity in the balance of power is associated with peace. The prevailing bargaining model of war, however, maintains that parity contributes to uncertainty about the balances of power and resolve, which hinders efforts to reach negotiated settlements short of armed conflict.14 The empirical record supports this theory and demonstrates parity in the balance of power is associated with conflict, and uneven balances of power are associated with peace.15 Situations of obvious strategic nuclear superiority, therefore, may be more stable than situations of strategic parity.

## Democracy NEG

### Democracy doesn’t solve stuff

#### Democracy is overrated – accountability is not proven nor is solvency for war

Daniel Larison ’12, PhD in history from the University of Chicago, “Democratic Peace Theory Is False,” THE AMERICAN CONSERVATIVE, http://www.theamericanconservative.com/larison/democratic-peace-theory-is-false/

Rojas’ claim depends entirely on the meaning of “genuine democracy.” Even though there are numerous examples of wars between states with universal male suffrage and elected governments (including that little dust-up known as WWI), the states in question probably don’t qualify as “genuine” democracies and so can’t be used as counter-examples. Regardless, democratic peace theory draws broad conclusions from a short period in modern history with very few cases before the 20th century. The core of democratic peace theory as I understand it is that democratic governments are more accountable to their populations, and because the people will bear the costs of the war they are going to be less willing to support a war policy. This supposedly keeps democratic states from waging wars against one another because of the built-in electoral and institutional checks on government power. One small problem with this is that it is rubbish.

Democracies in antiquity fought against one another. Political equality and voting do not abolish conflicts of interest between competing states. Democratic peace theory doesn’t account for the effects of nationalist and imperialist ideologies on the way democratic nations think about war. Democratic nations that have professional armies to do the fighting for them are often enthusiastic about overseas wars. The Conservative-Unionist government that waged the South African War (against two states with elected governments, I might add) enjoyed great popular support and won a huge majority in the “Khaki” election that followed.

As long as it goes well and doesn’t have too many costs, war can be quite popular, and even if the war is costly it may still be popular if it is fought for nationalist reasons that appeal to a majority of the public. If the public is whipped into thinking that there is an intolerable foreign threat or if they believe that their country can gain something at relatively low cost by going to war, the type of government they have really is irrelevant. Unless a democratic public believes that a military conflict will go badly for their military, they may be ready to welcome the outbreak of a war that they expect to win. Setting aside the flaws and failures of U.S.-led democracy promotion for a moment, the idea that reducing the number of non-democracies makes war less likely is just fantasy. Clashing interests between states aren’t going away, and the more democratic states there are in the world the more likely it is that two or more of them will eventually fight one another.

#### Best research shows democracy doesn’t produce peace

Jeff Grabmeier ‘15. Senior Director, Research communications, Media & PR “‘Democratic peace' may not prevent international conflict,” https://phys.org/news/2015-09-democratic-peace-international-conflict.html

Using a new technique to analyze 52 years of international conflict, researchers suggest that there may be no such thing as a "democratic peace."

In addition, a model developed with this new technique was found to predict international conflict five and even ten years in the future better than any existing model.

Democratic peace is the widely held theory that democracies are less likely to go to war against each other than countries with other types of government.

In the new study, researchers found that economic trade relationships and participation in international governmental organizations play a strong role in keeping the peace among countries. But democracy? Not so much.

"That's a startling finding because the value of joint democracy in preventing war is what we thought was the closest thing to a law in international politics," said Skyler Cranmer, lead author of the study and The Carter Phillips and Sue Henry Associate Professor of Political Science at The Ohio State University.

"There's been empirical research supporting this theory for the past 50 years. Even U.S. presidents have touted the value of a democratic peace, but it doesn't seem to hold up, at least the way we looked at it."

### NATO bad

#### NATO is obsolete – technology is not a game-changer

Simon Jenkins ’18, June 12, Guardian columnist, “Donald Trump is right. Nato is a costly white elephant,” THE GUARDIAN, <https://www.theguardian.com/commentisfree/2018/jul/12/donald-trump-nato-costly-white-elephant-russia>

I regard Trump as an aberration, a temporary trauma afflicting US politics. He honours the thesis of the historian Arthur Schlesinger, that America’s constitution often drives the republic to the abyss, only to drag it back again. But even monsters can ask the occasional good question. Thus Trump this week on Nato, a body so mired in platitude and waffle it has lost sight of its true purpose. Trump wants to know what Europe really regards as its defence policy, for he thinks it takes America for a ride. Nato was founded in 1949 in response to Stalin’s blockade of Berlin. It was meant to “keep the Soviet Union out, the Americans in, and the Germans down”. Since then, it has welcomed the American nuclear shield, at vast cost to America. Otherwise, its only military achievements have been the breakup of Yugoslavia and the loss of a squalid 17-year war in Afghanistan. Neither has anything to do with the North Atlantic. Nothing better symbolised this than Theresa May’s bizarre gift to Trump this week of 450 British troops for Kabul.

Nato was about deterring an attack on Europe from Russia. In 1945, the west agreed the Potsdam settlement, accepting the Soviets’ “sphere of influence” over eastern Europe. Thus when Russia invaded Hungary in 1956 and Czechoslovakia in 1968, there was no question of Nato, or Europe, retaliating. The iron curtain was iron.

Come 1989 and the collapse of Potsdam Europe, Nato did not approach a broken Russia to agree some new settlement. It did the opposite. To protests from Russia’s weakened leader, Boris Yeltsin, it gathered former Warsaw Pact states under its wing and advanced its border east towards Russia. It embraced Poland, Czechoslovakia and Hungary, then the Baltic states, Romania and Bulgaria. It was like Khrushchev stationing missiles in Cuba. Only Germany counselled caution.

Nato’s provocation was so blatant as to be an open invitation to any new populist leader in Moscow to exploit Russia’s bruised patriotism: hence Vladimir Putin. He and his kleptocratic cronies are virtually a Nato creation. But the fact that America was party to the provocation does not invalidate Trump’s question. What is Nato’s policy beyond needling Russia and feebly relying on the American shield?

It is astonishing that, three decades after 1989, Europe is almost back to a cold war with Moscow. As winner of the last war, Nato was primarily responsible for lowering tension and making peace. Instead it revelled in victory. If Europe wants to hire an America nuclear shield, it should deal with America over how to pay for it. But the current tit-for-tat hostilities with Russia are playing with fire, and counterproductive. Europe’s land forces are so weak they would be wiped out by Russia in a matter of days. So is Europe really expecting Washington to order a nuclear barrage against Russian “grey area” incursions into the Baltics, let alone a conflict with Orbán’s Hungary or Erdoğan’s Turkey – both Nato members?

This is not realistic, any more than was American intervention during Russia’s incursion in Ukraine or Georgia. That is why Orbán and Erdoğan are wisely cosying up to Putin. Nato is adrift of realpolitik.

Trump is effectively telling Europe that its Nato is as outdated as the Congress of Vienna by the time of Bismarck. He is wrong to rabbit on about spending 2% or 4% of GDP on weapons. This helps no one but the defence industries – spending should meet plausible threat, not some vague budget target. But no more helpful is Europe’s belligerent posturing towards Moscow, such as Britain’s reaction to the mysterious Wiltshire poisonings. Entrenching Putin behind a siege economy is not a defence policy.

#### NATO doesn’t fund their military enough to be useful

Christian Whiton ’18, July 6, Senior Fellow at the Center for the National Interest, “NATO Is Obsolete” THE NATIONAL INTEREST, https://nationalinterest.org/feature/nato-obsolete-25167?page=0%2C1

After the alliance was established in 1949, its first secretary general, Lord Hastings Ismay, summed up its purpose concisely: “to keep the Russians out, the Americans in, and the Germans down.” The unofficial mission matched the time well: Western Europe’s postwar future was clouded by the prospect of a Soviet invasion, American insularity, or German militarism—all possible given the preceding decades of history.

Nearly seventy years later, none of these concerns still exist. Furthermore, NATO's opposing alliance during the Cold War, the Warsaw Pact, quit the Soviet Bloc in 1989, and the Soviet Union itself passed into history in 1991—twenty-seven years ago.

Despite endless searches for a new mission to justify its massive burden on U.S. taxpayers, NATO has failed to be of much use since then. As its boosters like to remind us, after 9/11, the alliance invoked its Article 5 mutual-defense provision on our behalf. But action from America’s allies did not follow the grandiose gesture—the NATO mission in Afghanistan relied mostly on U.S. forces and effectively failed.

Today, the alliance’s bureaucrats and some member states spotlight a threat from Russia as a reason for keeping the organization alive, along with a laundry list of “train and equip” missions.

Yet NATO members' defense budgets don't reflect a real sense of danger from Russia or anyone else. Among the twenty-nine members, only the United States is really serious about its Article 3 obligations to defend itself, spending approximately $700 billion or 3.5 percent of its GDP on defense. No other NATO member comes close to this proportion, and the vast majority fail even to meet the modest, self-imposed requirement to devote at least 2 percent of GDP to defense.

### GLO defense

#### International liberal order is overhyped and chock full of falsities

Patrick Porter ’18, June 5, “A World Imagined: Nostalgia and Liberal Order,” CATO, https://www.cato.org/policy-analysis/world-imagined-nostalgia-liberal-order

According to a view popular in Washington, D.C., and other capitals around the world, the United States used its power and idealism for more than 70 years to create a security and economic order that transformed the world. This world order was liberal because the United States was liberal. “Liberal” in this context means the pursuit of security both through the spread of liberty, in the form of free markets and democratic constitutions, and the rule of law, in the form of rule‐​based international institutions. Today, defenders of that order fear that President Trump and a set of regressive forces are laying waste to it. They claim the consequences are grave: we are witnessing the “end of the West as we know it,”1 the abandonment of “global leadership” by its “long‐​time champion,”2 and a “coming Dark Age.”3 Foreign Affairs, the house organ of the foreign policy establishment, recently asked 32 experts whether the “liberal order is in peril.” Most agreed it is, with 26 respondents registering a confidence level of 7 out of 10.4 Alarmed by the political tumult of our time, nostalgists recall the post‐​1945 moment of institution building and benign internationalism and call for its reclamation.

They are, however, in the grip of a fiction. Liberalism and liberal projects abounded in the past 70 years. But the dream of a unitary, integrated global system organized around liberalism is ahistorical. In truth, the pre‐​Trump world was a more brutal and messy place than the nostalgia allows. To be sure, there was liberalism, and it did help define postwar international relations. Broadly speaking, the post‐​1945 period was, on many measures, more prosperous, less violent, and more collaborative than what came before. One defect of “liberal order” nostalgia is that it exaggerates these qualities and simply leaves out too many contrary historical realities. Other critics have already noted the gap between nostalgia and history and that the postwar world was never “whole.” At times the liberal order was neither very liberal nor very orderly. There may be “islands of liberal order, but they are floating in a sea of something quite different.”5

Not only do nostalgists get the history wrong, they fail to confront what “world ordering” actually entails. The main critique in this paper is that the fetish for “liberal order” has obscured what is involved in the process of “ordering” — or attempting to order — the globe. The United States, as the leading actor in the orthodox narrative, emerges as a power that created order through a benign internationalist vision, consensus building, and institution creating. But the successes and failures of that order also flowed from coercion, compromise, and rougher power politics. As the ordering superpower, the United States did not bind itself with the rules of the system. It upended, stretched, or broke liberal rules to shape a putatively liberal order. Appeals to the myth of a liberal Camelot flow from a deeper myth, of power politics without coercion and empire without imperialism.

This fuller narrative is also a story of tragic limits. The world was not so easily subjugated. Efforts to spread liberalism often contained the seeds of illiberalism. Multiple orders collided and met the limits of their reach and power. Efforts to create a liberal order ended up accommodating illiberalism. Liberalism itself proved to be a conflicted thing. At times, projects to advance it had unexpected results. As it happens, the pursuit of “liberal order” is not just an antidote to the current difficulties suffered by the international system but a source of them.

Ideas about “order” matter and have weighty policy implications. Just as material power enables or forecloses certain choices, ideas condition and constrain a country’s grand strategic decisions. Those who lament the fall of the “liberal order” are saying, in effect, that some ideas are illegitimate and should be off the table. They worry that “populism” and “isolationism” endanger traditional ideas that were once dominant, leading America to abandon its manifold commitments overseas, in turn driving the world into disorder. When they call for the reclamation of the old order, they also call for the perpetuation of American primacy. By contrast, this paper argues that the exaggerated notion of the “liberal order” and its imminent collapse is a myth of the foreign policy establishment and leads America to overstretch.

#### LIO is ineffective especially when led by the U.S.

Amitav Acharya ’20, January 14. “Hegemony and Diversity in the ‘Liberal International Order’: Theory and Reality,” E-INTERNATIONAL RELATIONS, https://www.e-ir.info/2020/01/14/hegemony-and-diversity-in-the-liberal-international-order-theory-and-reality/

Most analysts attribute the uncertain fate of the Liberal International Order (hereafter LIO) to the global power shift, anti-globalization sentiments, and the rise of populist leaders spearheaded by Donald Trump. But the crisis has longer and wider roots in what might be called the hegemony-diversity gap at the heart of the LIO. Supporters present the LIO as an inclusive order offering substantial material benefits to the world while remaining open to participation by all (Deudney and Ikenberry, 1999). Yet, the LIO is also cast as a hegemonic order, both as a product of US (or US-led Western) hegemony and as the dominant world order with no real alternatives. This simultaneous aspiration for diversity and hegemony creates a fundamental tension at the heart of the LIO, especially in the non-Western world, where the LIO is often perceived as a narrow ideological, economic and strategic framework reflecting and advancing the interests and identity of the Western nations led by the US. The LIO’s performance legitimacy from the material benefits it offered to rising powers like China and India is undercut by its normative legitimacy deficit in a world of political and cultural diversity. Meanwhile, in Western nations like the US, the benefits of the LIO offered abroad have become a source of resentment at home, thereby compounding the challenge to the LIO. This article focuses on the LIO’s relationship with the non-Western (Global South, postcolonial) world, and argues that as the LIO loses its presumed “hegemony”, instead of claiming to “co-opt” the Rest, we must embrace the realities of a culturally and political diverse world.

### Climate defense

#### Oceans prove climate change cannot be fixed

Damian Carrington ’22, February 1, “Extreme heat in oceans ‘passed point of no return’ in 2014,” THE GUARDIAN, https://www.theguardian.com/environment/2022/feb/01/extreme-heat-oceans-passed-point-of-no-return-high-temperatures-wildlife-seas

Extreme heat in the world’s oceans passed the “point of no return” in 2014 and has become the new normal, according to research.

Scientists analysed sea surface temperatures over the last 150 years, which have risen because of global heating. They found that extreme temperatures occurring just 2% of the time a century ago have occurred at least 50% of the time across the global ocean since 2014.

In some hotspots, extreme temperatures occur 90% of the time, severely affecting wildlife. More than 90% of the heat trapped by greenhouse gases is absorbed by the ocean, which plays a critical role in maintaining a stable climate.

“By using this measure of extremes, we’ve shown that climate change is not something that is uncertain and may happen in the distant future – it’s something that is a historical fact and has occurred already,” said Kyle Van Houtan, at the Monterey Bay Aquarium, US, and one of the research team. “Extreme climate change is here, it’s in the ocean, and the ocean underpins all life on Earth.”

#### Aggressive action can’t solve

VIVAN SORAB ’19, MARCH 26, “Too Little, Too Late? Carbon Emissions and the Point of No Return,” YALE ENVIRONMENT REVIEW, <https://environment-review.yale.edu/too-little-too-late-carbon-emissions-and-point-no-return>

A recent study asks a related but hitherto unaddressed question: how long do policymakers have to dramatically reduce fossil fuel consumption to meet the Paris Agreement’s 2 degree target? Using the turn of the century as a benchmark, the study analyzes when action would be necessary to ensure that in 2100 the world would meet the Paris Agreement’s target. Scientists from the Universities of Oxford, UK, and Utrecht, The Netherlands outline what they call the Point of No Return, the year after which even aggressive policy measures would be unlikely to meet the Paris Agreement’s goal by the end of the century. Unlike previous studies, this research adds risk to the picture: how would the risk tolerance of policymakers affect the Point of No Return?

### Leadership in Europe fails

#### U.S. hegemony in Europe is not sustainable

Muhittin Ataman ’21, September 19, “Global leadership crisis: The U.S. hegemony vs. China,” DAILY SABAH, https://www.dailysabah.com/opinion/columns/global-leadership-crisis-the-us-hegemony-vs-china

Today’s world is in both a comprehensive transition and a deep crisis. Not only do rivalries and enmities abound but today’s alliances are also quite vulnerable. The survival, duration and sustainability of all these alliances, rivalries and conflicts are in question. In other words, neither conflicting nor cooperative relations are sustainable over the long term. All foreign policy activities are conducted on slippery ground. That is, the direction and pace of any relationship may change at any time.

Therefore, when we analyze the current global balance of power, we have to take these conditions into consideration. No global power pursues a principled foreign policy orientation. Most countries follow an eclectic, sectoral and compartmentalized foreign policy. In this piece, I want to briefly analyze the current foreign relations tendencies of certain global powers.

Leadership crisis

Even though the United States is the most powerful, influential and important international actor, it faces difficulties in maintaining its global leadership. As U.S. relations with other leading global powers are in flux, U.S. relations with its European allies are not sustainable. The U.S. is neither comfortable with the current pace of global relations, nor it is able to change the pace of these events to accommodate its national interests.

#### US-EU cooperation no longer functions – the two aren’t key to each other

Muhittin Ataman ’21, September 19, “Global leadership crisis: The U.S. hegemony vs. China,” DAILY SABAH, https://www.dailysabah.com/opinion/columns/global-leadership-crisis-the-us-hegemony-vs-china

On the other hand, the steps taken by the U.S. in the Indo-Pacific region both directly and indirectly undermine its trans-Atlantic allegiances. It seems that its European/NATO allies will be of lesser importance for the U.S. for the foreseeable future. However, it will continue to cooperate with European countries against the perceived threat from Russia, still the main "other" of the NATO alliance.

The relations between the U.S. and European Union are increasingly problematic. There are brief ups and downs, both alliance and rivalry, in their relationship. European countries do not share many concerns with the U.S. and vice versa. While European countries prioritize their relations with Russia, the U.S. prioritizes its relations with China.

### U.S. hegemony unsustainable

#### Multipolarity is inevitable and peaceful – maintaining U.S. hegemony prompts superpower conflict

Dr. Nadia Helmy ’22, April 14, “The Chinese theory on “the end of American hegemony” after the Ukrainian war,” MODERN DIPLOMACY, https://moderndiplomacy.eu/2022/04/14/the-chinese-theory-on-the-end-of-american-hegemony-after-the-ukrainian-war/

From my point of view, in my personal belief that the multipolar international system has already begun to become clear, and before the outbreak of the Russian-Ukrainian war in the first place, with its many aspects of applications and features. We can find the analyses done by the “Harvard University” in the USA, emphasizing that China is quickly catching up with the United States of America in terms of (technology, military and strategic capabilities), despite the dominance of the United States of America over international finance and research and development.

Here, China is well aware of the (American desire for global hegemony and the unilateral system to direct the whole world). Therefore, the United States of America is concerned about the Chinese and Russian powers, especially after Russia launched its current attack against Ukraine, due to the interference of the United States of America and the West in Russia’s spheres of influence, with an attempt Ukraine’s inclusion in NATO, with the realization that China is the second largest developed economy in the world and has enormous military defense capabilities, and its Russian ally is a formidable military force that Washington and its allies in NATO fear, which was evident during the Ukraine war, as well as regional influence. Russia and China together have intertwined and connected borders and sprawling geographic spaces internally and externally, in addition to the abundance of resources, and the most important thing for me is encouraging their citizens to (belief in the idea of ​​national tide and a sense of popular nationalism and strength globally in the face of American and Western hegemony to stop and limit their power and call for their national popular leaders to rally with their leaders).

China is seeking to achieve a high degree of strategic cohesion with Russia, with (expanding their alliances globally between the developing countries of the South, which are represented in the African, Arab and Latin American countries). Therefore, the United States of America realizes the strength of the alliance and partnership between China and Russia, and the strong support for each other politically, economically, militarily and technologically. China has also become more aware that through deep political, economic and security cooperation with Russia, China will ensure the possibility of forming a multipolarity, with the presence of more than one international and regional pole around the world, with an emphasis on expanding this through (encouraging more different developing countries to join their alliance to reform the current world system, which is dominated by American policies and undermines the sovereignty of weak and marginalized countries by interfering in the internal affairs of countries to ensure their control over them).

We find that in the face of the American economic power, China and Russia together represent about 77% of the gross domestic product of the United States of America alone, in the current value of the dollar and in comparison to the purchasing power parity of Russia and China together compared to Washington, and in addition, the United States of America is now burdened with debt, which has increased to reach about $30 trillion, with (the US debt ratio exceeds many times the value and proportion of its GDP, which China is well aware of about the decline in US economic power globally).

In view of the United States of America’s understanding of the indicators and axes of power, China and Russia, the United States of America has become more and more promoting confrontational concepts in their confrontation, as the most threatening countries to the world. With the American focus on (the issue of the rise of China and the ideological confrontation with the Communist Party of China as a civilization different from the West and liberal American and Western concepts. As a result, Washington has become more eager to impede and halt Chinese growth in particular and limit the scope and limits of the partnership and alliance between China and Russia). Which the Egyptian researcher has carefully analyzed during the Ukrainian-Russian war, with the American insistence on the need for China to adopt a clear position on that Russian war against Ukraine, and Washington’s attempt to take strict commitments against China to ensure that it does not support Russia economically. This is what China and its communist leaders have become aware of, and are aware of these American methods to drive a wedge between it and Russia and President “Putin”.

The whole world is aware that these close relations and alliances between China and Russia are the cornerstone for establishing and forming a multipolar international system, in the face of US policies that are still seeking to preserve their global dominant uniqueness. Therefore, China and Russia are trying to expand the scope of their international partnerships through (the Chinese Silk Road, launching initiatives for development partnership with developing countries of the South, African, Arab countries, Latin and South American countries), because success in this strategy is enough to break that American hegemony, and is a basic guarantee for the transition for a multipolar world.

Here we analyze the impact of the strategic mistakes committed by the United States of America to destabilize the world, by increasing the intensity of conflict and international polarization, as well as its inability to modernize the global system, to overcome shortcomings, challenges and new competitions, but Washington has created many international crises in large parts of the world, Such as: (Afghanistan, Iraq, Syria, Venezuela)…etc. And its spending of a large budget that exceeded 8 trillion dollars for the war on terrorism, which proved the extent of the American failure and impotence in confronting it after its humiliating withdrawal from Afghanistan and the Taliban movement’s control of the government. These are the internationally failed American policies that caused a state of global division in its confrontation.

Therefore, from my point of view, the United States of America is trying here to (take advantage of the crisis of the current Russian war against Ukraine to unite the front of NATO and its members in the West in the face of Russia and President “Putin” under its leadership) to assert its hegemony and uniqueness globally in the face of China and Russia, which is what it must be aware of. The countries of the European Union, in view of the violation by the United States of its covenants and harm to the interests of its European partners, and the most prominent example to me of this issue, is the (American signing of the Aukus military defense agreement with Australia and Britain in the face of France), which caused the Europeans and France to lose that deal, passing Washington’s interests and its excessive selfishness in dealing with its European allies by giving preference to its interests over it and passing it in the face of them, harming them in practice.

On the other hand, the United States of America failed to adapt to the changing global economy, unlike China, after a number of global economic crises, such as: (the Corona virus pandemic, the global financial crisis in 2008, the Ukraine crisis), and others. Which caused (millions of American citizens to lose their jobs, especially in the field of manufacturing and technology), which the United States of America tried to evade internally by blaming the unfair trade policies pursued by China internationally in confronting them.

Here we will find the extent of Chinese President Xi Jinping’s insistence, in all his political speeches, to emphasize the concept of (the common future of humanity), and to emphasize his slogan around (the Chinese dream), to achieve a well-off society, and to work according to the principle of mutual benefit for all, and international profit for all. With President (Xi Jinping’s focusing on the path leading to the realization of this Chinese dream), through three axes, which are: (the Chinese road, the Chinese spirit, and the Chinese power).

The speeches of Comrade Chinese President “Xi Jinping” are focusing on the keys and mechanisms for implementing this Chinese dream in an internationally multipolar world, and the extent to which this is appropriate for China and the rest of the world. We find that the essence of implementing this Chinese dream internally is to reach an internationally multipolar world away from the concepts of American hegemony. Hence, this Chinese dream of an international multilateral world has become (the essence of Chinese national identity by seeking to restore its influence as a force by following China and the ruling Communist Party leaders for several important policies, including the axes of development and reform policy plans across China). In the end, it reflects all (the components of the basic socialist culture and values ​​of China, as well as that Chinese spirit that is in harmony with the goals of the Chinese state, the nation and all the Chinese people).

Based on this aforementioned analysis, we can conclude that American hegemony has already ended globally or is on the way to disappearing or evading, but achieving (a stable global balance of power) is still possible.

### U.S. hegemony bad

#### Transition away from hegemony in Europe and NATO coop is best for stability

Joshua R. Shifrinson ’21, January 28, “The Dominance Dilemma: The American Approach to NATO and its Future,” QUINCY BRIEF NO. 8, https://quincyinst.org/report/the-dominance-dilemma-the-american-approach-to-nato-and-its-future/

In addition, the United States faces diminishing returns, and several negative results, from continuing its present approach to NATO. The alliance has now been enlarged to the point where few strategically meaningful European actors exist outside of NATO’s orbit, even as those that exist, such as Ukraine, would constitute a net loss for U.S. national security by risking a direct conflict with Moscow. In short, little can be gained from continued expansion. Likewise, as European leaders continue pressing for greater autonomy from the United States and NATO, the U.S. will generate increased friction with its allies if it continues to suppress their initiatives in this direction. This tension, meanwhile, comes at a time when Europe itself is of diminishing relative importance to an American grand strategy increasingly fixed on Asia, as most of the actors involved recognize. As the U.S.–led alliance continues moving toward Russia’s borders, it may play some role in driving Moscow and Beijing to cooperate in international affairs. In short, U.S. policy in Asia complicates U.S. strategy in Europe, and vice-versa.

The United States requires a course correction. U.S. policy toward NATO now injects a large degree of instability and unsustainability into the region, which ironically possesses the preconditions for an unprecedented degree of stability thanks in part to prior U.S. efforts. In consequence, the Biden administration should consider proceeding along four tracks, with the goal of significantly reducing the U.S. security presence via NATO.

#### US could always step back in and stabilize Europe

Joshua R. Shifrinson ’21, January 28, “The Dominance Dilemma: The American Approach to NATO and its Future,” QUINCY BRIEF NO. 8, https://quincyinst.org/report/the-dominance-dilemma-the-american-approach-to-nato-and-its-future/

The United States ought to prepare for a broader recalibration of political responsibilities in Europe. Precisely because the United States has other domestic and international obligations, and because NATO’s European members are increasingly disenchanted with U.S. predominance, conditions are ripe to empower the European allies. The objective should be to strengthen intra–European solidarity and cooperation while the United States steps back from active management of European security. The United States should pivot toward becoming the pacifier of last resort rather than the manager of early squabbles.

There are reasons to believe this result is attainable. Many of NATO’s major European players, especially France and Germany, have deepened cooperation in both NATO and non–NATO contexts such as the EU over the past several decades. Disenchantment with U.S. dominance and lingering concerns about Russia provide incentives for sustained cooperation even with a significantly reduced American presence. The United States ought to lean into these trends, returning to its vision of the early postwar years by reducing, limiting, and making more conditional the U.S. presence in the alliance. Over time, such steps could lay the foundation for a comprehensive American withdrawal, providing that Europe remains stable and open to U.S. influence when U.S. interests are involved. Nor would such a retrenchment sacrifice long-term U.S. interests: Should intra–European tensions spike without an American pacifier, America’s lingering connection to the alliance would enable the United States to reengage as needed.

## Off-case

### CP – EU

#### NATO is unable to handle these issues – the EU and other democracies are key

Rasser 20 {“Common Code: An Alliance Framework for Democratic Technology Policy. The Case for a Technology Alliance.” Martijn Rasser () et al. Center for a New American Security. Published in 2020, Accessed June 27, 2022. https://www.jstor.org/stable/pdf/resrep27424.6.pdf} – TW

**Creating a beneficial technology future will require coordination and collaboration**. Technology-leading countries—those with broad-based technological capabilities and committed to liberal norms like democracy, openness, transparency, inclusiveness and a rules-based order—should work together on a range of important but difficult technology matters. While existing alliances and agreements such as NATO, the Organisation for Economic Co-operation and Development (OECD), and Wassenaar Arrangement signatories deal with aspects of technology policy, **none are equipped to handle the range of largely interrelated issues that underpin the critical technologies of the 21st century**. **They are also much too large for effective decisionmaking on such matters**. The OECD, while a useful forum for tackling broad issues such as the responsible development of AI—and thus a potentially valuable partner for a technology alliance—is too big and diffuse. The G-7 is closest to being the right entity size-wise. Adapting the economic club to address technological issues, however, would require extensive restructuring and taking on new members, muddling the group’s original purpose in the process. **Instead, the world’s technology-leading liberal democracies**—ten countries and the European Union— should join forces to create a collective foundation where each country can collaborate and compete. A key goal for this group should be to ensure a level playing field where the most innovative and dynamic companies succeed, not those swaddled by mercantilist industrial policies.

### CP – EU-NATO

#### Cooperation between NATO and the EU solves

**SOARE, 21** (SIMONA R. SOARE, Research Fellow for Defence and Military Analysis， PhD in Political Science from the National School for Political and Administrative Studies in Bucharest, 6-11-2021, accessed on 6-25-2022, The German Marshall Fund of the United States, "Innovation as Adaptation: NATO and Emerging Technologies", <https://www.gmfus.org/news/innovation-adaptation-nato-and-emerging-technologies)-JLI>

The Biden administration also provides a window of opportunity to progress and be ambitious in broadening and regularizing NATO-EU cooperation in the field of innovation and EDTs. While political dialogue among their leadership has been steadily increasing over the past five years, the EU and NATO have consulted on their respective EDTs agendas only twice. Furthermore, bureaucratic procedures and misalignments sometimes frustrate even staff-to-staff cooperation in this area. The EU and increasingly NATO are proliferating agencies that conduct work on innovation in EDTs, including in security and defense. This makes it challenging to achieve internal coherence of activities within one organization, let alone coordinating agendas between the two.As the allies meet with the EU High Representative for Foreign Affairs and Security Policy Josep Borrell at this month’s NATO summit, the two organizations need a more ambition agenda for cooperation. In particular, the EU and NATO need to consider a joint task force on fostering defense innovation and EDTs, with renewable two-year mandates. This instrument would provide political impetus for closer cooperation on EDTs, it would give coherence, regularity, and structure to the efforts of the two sides, and ensure commonality of purpose and synergy of output. In addition, allies could consider meeting regularly in EU-NATO digital summit formats. The EU could take the lead in this regard given its considerable financial capacity for investing in EDTs and its regulatory powers. EU-NATO digital summits would allow the transatlantic partners to regularly review progress, provide strategic guidance on legal, ethical and adoption challenges related to innovation and EDTs, and enhance their tech diplomacy by inviting like-minded global partners to attend.

### DA – focus uniqueness

#### NATO is focused on China – this is the newest card, assumes the recent summit

**Aljazeera 6-30**-22 (NATO declares China a security challenge for the first time, Al Jazeera, https://www.aljazeera.com/news/2022/6/30/nato-names-china-a-strategic-priority-for-the-first-time, 6-30-22) -JV

NATO has listed China as one of its strategic priorities for the first time, saying Beijing’s ambitions and its “coercive policies” challenge the Western bloc’s “interests, security and values”. The alliance’s new blueprint, or Strategic Concept (PDF), that lays out its priorities for the next decade, was approved at a leader’s summit in Spain on Wednesday. The document directed its harshest language towards Russia, which it described as “the most significant and direct threat” to the alliance’s peace and security, but said Beijing’s military ambitions, its confrontational rhetoric towards Taiwan and its increasingly close ties with Moscow posed “systemic challenges”. “China is substantially building up its military forces, including nuclear weapons, bullying its neighbours, threatening Taiwan … monitoring and controlling its own citizens through advanced technology, and spreading Russian lies and disinformation,” NATO’s Secretary General Jens Stoltenberg told reporters. “China is not our adversary,” he added, “but we must be clear-eyed about the serious challenges it represents.” In response, China on Thursday said it “firmly” opposed NATO’s declaration, calling it a “completely futile” warning. “NATO’s so-called new strategic concept document disregards facts, confuses black and white … [and] smears China’s foreign policy,” foreign ministry spokesman Zhao Lijian said. The official turn by NATO puts the world’s largest military alliance, based on the United States armed forces, on guard against China, which has the world’s second-largest economy and a rapidly growing military, both in numbers and in top-notch technology. “One of the things that [China’s] doing is seeking to undermine the rules-based international order that we adhere to, that we believe in, that we helped build,” said US Secretary of State Antony Blinken. “And if China’s challenging it in one way or another, we will stand up to that.” Western leaders are concerned that Russia’s aggression in Ukraine, which China is yet to condemn, could embolden Beijing to be more assertive over Taiwan. China considers Taiwan a part of its territory with no right to independent recognition as a state or representation on the world stage. Speaking at an event in Madrid that was not part of the NATO summit, British Foreign Secretary Liz Truss said that unless China is checked “there is a real risk that they draw the wrong idea which results in a catastrophic miscalculation such as invading Taiwan,” referring to the self-governing island that China claims as a province. Marcin Jerzewski, head of the Taiwan office of the European Values Center for Security Policy, told Al Jazeera that NATO members may also be concerned about Chinese-Russian military cooperation on Russia’s oft-forgotten Pacific coast. Before the war in Ukraine, Putin began pursuing his own “pivot to the east” by ramping up economic development and his military presence on the Pacific Coast. “This is an important step for NATO and in a way a sign that NATO is waking up to a new geopolitical reality, which is largely defined by the growing confluence of Russian and Chinese strategic interests,” Jerzewski said. “Russia has been viewed mainly as a source of threats in the European theatre, but that view ignores Russia’s physical presence on the shores of the Pacific.” Highlighting NATO’s new focus on China, the gathering of world leaders in Madrid, both inside the bloc’s summit and on its sidelines, included many from Asian nations. It was the first time that the leaders of Japan, South Korea, Australia and New Zealand were invited to a NATO summit. They participated in a NATO session on new global challenges after holding a side meeting outside of the summit. New Zealand’s Prime Minister Jacinda Ardern, speaking at the meeting, said China had become “more assertive and more willing to challenge international rules and norms”. Ardern, whose government has toughened its tone recently on both security and Beijing’s growing presence in the South Pacific, in part due to the signing of a security pact between China and the Solomon Islands, said the resilience of the Indo-Pacific region must be strengthened through relationships and economic architecture rather than militarisation. “We must stand firm on the rules-based order, call for diplomatic engagement and speak out against human rights abuses at all times when and where we see them,” she said. Earlier on Wednesday, Zhao, the Chinese foreign ministry spokesman, had accused NATO of maintaining a “Cold War mentality”. The alliance should give up its “zero-sum game and the practice of creating enemies, and not try to mess up Asia and the whole world after disrupting Europe”, he said. Zhao also criticised the sanctions brought against Russia by NATO members over the Ukraine war, saying “facts have proven that sanctions are not a way out of conflicts, and the continued delivery of weapons will not help realise peace”. China continues to claim it is neutral in the Ukraine war, and has accused NATO and the US of provoking Russia into military action. Weeks before Russia’s February invasion, Chinese President Xi Jinping hosted his Russian counterpart, Vladimir Putin, for a summit at which they pledged a partnership that had “no limits”.

### DA – focus links

#### Biotech is not easy for NATO – magnifies internal divisions and requires wholly new frameworks for coop

Simona R. Soare ’21, June 11, “Innovation as Adaptation: NATO and Emerging Technologies,” GMFUS, https://www.gmfus.org/news/innovation-adaptation-nato-and-emerging-technologies

However, NATO and the transatlantic allies are neither the only nor the most agile actors investing in emerging and disruptive technologies. China and Russia already invest substantially in and have accelerated their adoption of these technologies in military applications. To maintain its strategic advantage against China and Russia, NATO needs to become an agent of innovation and be more agile and strategic in supporting allies to jointly exploit new technologies for deterrence, defense, and resilience purposes. NATO has prioritized EDTs and signaled it has joined “the technological adoption race” against China and Russia.1 Much work remains to be done. Allies remain divided on the ethical and legal specifics of the military use of EDTs and by their national-industrial preferences. Technological capacity across the alliance also varies significantly and, as always, funding is in short supply. Concrete decisions on how to consolidate innovation in EDTs, a critical task for NATO’s mission and future adaptation, are expected at this month’s Brussels summit. Specifically, allies will respond to calls for a “strategic surge” in EDTs2 innovation by establishing a Defense Innovation Accelerator, an opt-in instrument funded through dedicated national contributions, which NATO hopes will incentivize innovation and transatlantic cooperation on emerging technologies.3

#### NATO is internally divided over biotech – plan undermines cohesion

Eddie Walsh ’13, the President of the Emerging Science and Technology Policy Centre, a Senior Fellow at the School of Foreign Service - Georgetown University, and the Director-General of the Pacific Islands Society, “NATO risks unity over emerging technologies divide,” ALJAZEERA, https://www.aljazeera.com/opinions/2013/8/10/nato-risks-unity-over-emerging-technologies-divide

Disruptive innovations

At present, the world is witnessing an unprecedented period of scientific and technological innovation being spurred on by the synergistic combination of converging technologies, including nanotechnology, biotechnology, robotics, information technology, and cognitive science (NBRIC). Such convergence is producing a wide range of disruptive innovations that may contribute to a “tremendous improvement in human abilities, societal outcomes, the nation’s productivity, and the quality of life”. And, current WMD states clearly do not possess a monopoly over such innovation.

Converging technologies also pose fundamental human security challenges. As Francis Fukuyama once argued in Our Posthuman Future: Consequences of the Biotechnology Revolution, converging technologies could inequitably transform the world we live in and, in the process, undermine the very foundations that underpin liberal democracies. Whether or not such a future unfolds, it is clear that their application raises serious ethical and moral issues that are proving divisive for allies and enemies alike (eg: the debates over armed drones and cyber espionage). Even where common approaches can be achieved (eg: combatting designer drugs), converging technologies are growing “faster than our ability to legislate or regulate” them.

The search for consensus

These developments are putting new stresses on the NATO alliance. According to a recent experts workshop, the NBRIC Revolution is threatening NATO unity. “As warfare is outsourced to only those who are ‘near peers’ in technology and societal views shift,” NATO will likely experience “decreasing political tolerance for alliance security efforts”. If NATO member states want to sustain “the traditional transatlantic compact [European political support in return for US military guarantees]”, they must change the way NATO approaches cooperative security around emerging technologies. And, they need to do it now.

#### NATO lacks resources – adopting new tech approaches overwhelms them

Max Bergmann and Siena Cicarelli ’21, January 13, “NATO’s Financing Gap,” AMERICAN PROGRESS, https://www.americanprogress.org/article/natos-financing-gap/

Now, with the COVID-19 crisis hammering the balance sheets of all NATO members, the prospect for European defense spending looks bleak.5 It seems unlikely that there will be significant new investment to address some of NATO’s critical capability gaps. Indeed, the European Union—which had planned to increase funding to upgrade the dual-use infrastructure critical to moving NATO forces—has reduced its planned allocations in its recent budget.6 NATO members seeking to keep their economies alive are unlikely to prioritize defense.

This is a serious problem for the alliance, and NATO needs to think more creatively about how to support continued alliance investment in the wake of the massive economic contraction caused by COVID-19. Simply demanding that countries spend more on defense, which was not very effective prepandemic, will certainly not work now.

What has become apparent is that NATO’s default focus on individual nation-state spending commitments was doing little to address alliancewide issues. Collectively, European NATO members spend as much on defense as Russia, yet the disaggregated and loosely coordinated spending by individual states means that the alliance’s combat strength is well short of what it could be and has left critical gaps in its capabilities.

NATO, since its founding, has lacked the resources to fill gaps and make investments. The alliance has overlooked one of its potentially most powerful assets—the collective economic and financial clout of its members. NATO has not leveraged its collective financial stature and the position of its many wealthy members to shore up the alliance. In the wake of the COVID-19 crisis, this must change through the creation of its own bank.