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#### Strong commercial space catalyzes tech innovation – progress at the margins and spinoff tech change global information networks

Joshua Hampson 2017, Security Studies Fellow at the Niskanen Center, 1-25-2017, “The Future of Space Commercialization”, Niskanen Center, https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf

Innovation is generally hard to predict; some new technologies seem to come out of nowhere and others only take off when paired with a new application. It is difficult to predict the future, but it is reasonable to expect that a growing space economy would open opportunities for technological and organizational innovation. In terms of technology, the difficult environment of outer space helps incentivize progress along the margins. Because each object launched into orbit costs a significant amount of money—at the moment between $27,000 and $43,000 per pound, though that will likely drop in the future —each 19 reduction in payload size saves money or means more can be launched. At the same time, the ability to fit more capability into a smaller satellite opens outer space to actors that previously were priced out of the market. This is one of the reasons why small, affordable satellites are increasingly pursued by companies or organizations that cannot afford to launch larger traditional satellites. These small 20 satellites also provide non-traditional launchers, such as engineering students or prototypers, the opportunity to learn about satellite production and test new technologies before working on a full-sized satellite. That expansion of developers, experimenters, and testers cannot but help increase innovation opportunities. Technological developments from outer space have been applied to terrestrial life since the earliest days of space exploration. The National Aeronautics and Space Administration (NASA) maintains a website that lists technologies that have spun off from such research projects. Lightweight 21 nanotubes, useful in protecting astronauts during space exploration, are now being tested for applications in emergency response gear and electrical insulation. The need for certainty about the resiliency of materials used in space led to the development of an analytics tool useful across a range of industries. Temper foam, the material used in memory-foam pillows, was developed for NASA for seat covers. As more companies pursue their own space goals, more innovations will likely come from the commercial sector. Outer space is not just a catalyst for technological development. Satellite constellations and their unique line-of-sight vantage point can provide new perspectives to old industries. Deploying satellites into low-Earth orbit, as Facebook wants to do, can connect large, previously-unreached swathes of 22 humanity to the Internet. Remote sensing technology could change how whole industries operate, such as crop monitoring, herd management, crisis response, and land evaluation, among others. 23 While satellites cannot provide all essential information for some of these industries, they can fill in some useful gaps and work as part of a wider system of tools. Space infrastructure, in helping to change how people connect and perceive Earth, could help spark innovations on the ground as well. These innovations, changes to global networks, and new opportunities could lead to wider economic growth.

#### Commercial space is key to tourism---that solves aerospace competitiveness.

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Introduction and formulation of the study’s problema tic. Spaceflight is expensive, especially given that the cost of building rockets and spacecraft are high due to the engineering and materials involved. It is clear here that there is a need of democratisation of the spaceflight, the relationship between the cost reduction of the access to space and a rise of interests of more potential customers is an actual trend. A relationship that is being redefined by the rapidly advancing fields of commercial spaceflight and space tourism. A greater attention to space tourism and commercial spaceflights is required in order to develop a coherent, long-term conceptualization of the implications of modern mobility for sustainability. With the rise of the tourism in the aerospace industry, new technological approaches have been explored to reduce considerably the costs of access to space and may lead to the improvement of spaceflight technology. To understand this fact, in section 1 we will see how the space tourism can bring some improvements in the standards of the aerospace industry, afterwards in section 2 we will see which kind of economic models and marketing approaches can be put in place in order to have a better management of assets and an increase in the interest of the public in this new branch of tourism. Analysis of recent research and publications The economy of the aeronautics and space industry is based on the traditional trading model of selling products at a price above its costs. The final customer buys a good, which the supplier produces and delivers. Manufacturers of aircraft purchase engines and equipment and sell a directly assembled product to armies, airlines, and rental companies. They do not sell to passengers, who buy the service from the airlines. This classical model knows certain specificities here. This industry has a mastery of technologies that are directly exploitable by the military. As a result, States are heavily involved in its research and development work and many of its projects are under the cover of “Secret-Defence”. It requires heavy investment in the production tool. That is why it is financed in part by state military programs and purchasing options for its clients. The aeronautics and space sector is driven by different demands. These of the States, which wish to dispose of the armaments furnished by this industry. These of people who travel by plane for business or leisure. These of companies that ship goods through the air. And finally, these of organizations of all types that work to conquer space. History has demonstrated that as technology has evolved and states have increasingly recognized the potential of outer space, the range of activities planned for outer space has proliferated. In addition, the commercial prospects offered by outer space have led to significant participation by private enterprises. If its state anchor refers to the concept of “industry of sovereignty”, it has progressively internationalized to rest on markets and processes today globalized. If companies are granted access in space, this will create opportunities for diversification, which will ease the tension between companies, and pressure on companies to encourage wasteful practices like persuading the consumer to consume more than what is necessary. The development of space tourism will benefit people socially. This will help to break down the tension that many people feel about the future due to projections of the limited resources of the earth. The cost of outer space travel is steep and wasteful from an economic point of view. But space tourism will also make a potentially critical contribution in overcoming the pressures of deflation in the world that is caused by the oversupply in traditional industries and the slow development of new industries. The fundamental misconception by economists about the future role of commercial space travel is essential because of the relation to the present condition of the global economy in order to further understand this; it is required to first understand the basic pattern of business development all around the world. As the name implies, space tourism is travelling to space as a destination for recreational, leisure or business purposes. Faced with the environmental challenge, companies operating in this sector will have to renew themselves and respond to the new challenges in terms of technical innovation imposed by the establishment of assets promoting the emergence of space tourism. The space tourism market is a niche market with a limited number of vendors. The market is still in its development stage where companies are trying to enhance their spaceflight technology. Growing competition, rapid advances in technology, frequent changes in government policies, public consequence, and environmental regulations are currently the major factors that challenge the growth of the players in this global market. Space enthusiasts are delighted at this flurry of renewed interest, and the fact that China has succeeded in sending a person into orbit merely heightens the stakes and intensifies the competition. In recent years, some private enterprises have been approaching Space flight with a relatively low-cost philosophy, in great contrast with the one followed by government agencies in past years. In fact, some examples of small reusable airplane-like vehicles have been developed to perform sub-orbital missions, which could represent a first step towards a safer, more comfortable and less expensive access to Space in the near future. The main idea is to merge part of technological solutions developed for aeronautical and atmospheric re-entry purposes in order to design such vehicles. But to see in these initiatives the dawn of a space tourism age would be making a leap of faith. True, space’s return to the top of the international policy agenda has to be welcomed, not least for its commercial potential. The recent growth of activities towards developing passenger space travel services is very promising; however, there is a widespread but mistaken idea that space tourism will remain a small-scale activity of the very wealthy. The truth is that having been delayed for over three decades by government space agencies’ failure to develop more than a small fraction of the commercial potential of space, the start of space travel services is long overdue, and so they are capable of growing rapidly into a major new industry. That is, the technical and business know-how exists to enable space tourism to grow to a turnover of 100 billion Euros/year within a few decades if it receives the public support of even 10% of space agencies budgets. This development would sharply reduce the cost of accessing the resources of space, which could prevent the spread of the “resource wars” which have begun so ominously. No activity, therefore, offers greater economic benefits than the rapid development of low-cost space tourism services. A range of government policies should be revised to reflect this.

#### US aerospace decline causes global nuclear war

Pfaltzgraff 10 – Robert L, Shelby Cullom Davis Professor of International Security Studies at. The Fletcher School of Law and Diplomacy and President of the Institute for Foreign Policy Analysis, et al., Final Report of the IFPA-Fletcher Conference on National Security Strategy and Policy, “Air, Space, & Cyberspace Power in the 21st-Century”, p. xiii-9

Deterrence Strategy In stark contrast to the bipolar Cold War nuclear setting, today’s security environment includes multiple, independent nuclear actors. Some of these independent nuclear weapons states are potential adversaries, some are rivals, and some are friends, but the initial decision for action by any one of them may lie beyond U.S. control. The United States may need to influence, signal, and restrain enemies, and it may need to continue to provide security guarantees to non-nuclear friends and allies. America may also face catalytic warfare, where, for example, a U.S. ally such as Israel or a third party such as China could initiate action that might escalate to a nuclear exchange. Although the United States would not be a party to the nuclear escalation decision process, it could be drawn into the conflict. Compared to a bipolar world, very little is known about strategic nuclear interaction and escalation in a multipolar world. The U.S. nuclear deterrent must restrain a wider variety of actors today than during the Cold War. This requires a range of capabilities and the capacity to address specific challenges. The deterrent must provide security guarantees and assurance sufficient to prevent the initiation of catalytic warfare by an ally, while deterring an adversary from resorting to nuclear escalation. America may also need simultaneously to deter more than one other nuclear state. Deterrence requirements include four critical elements: early warning, C2, delivery systems, and weapons. The Air Force plays an indispensable role in furnishing the U.S. early warning system in its entirety through satellites and radar networks. In command and control, infrastructure is provided by the Air Force, including Milstar satellites and, in the future, advanced extremely high frequency (AEHF) satellites. In the area of delivery systems and weapons, two-thirds of the strategic triad – intercontinental ballistic missiles (ICBMs) and bombers – is furnished by the Air Force and its Global Strike Command. U.S. Overseas Basing and the Anti-Access/Area-Denial Threat The increased availability of anti-access/area-denial assets coupled with growing threats to the sea, air, space, and cyberspace commons are challenging the power projection capabilities of the United States. These threats, in the form of aircraft and long-range missiles carrying conventional or nuclear munitions, present problems for our overseas bases. States such as North Korea, China, and Iran jeopardize the notion that forward-deployed U.S. forces and bases will be safe from enemy attack. Consequently, the United States must create a more flexible basing structure encompassing a passive and active defense posture that includes these features: dispersal, hardening, increased warning time of attack, and air defenses. Simultaneously, the United States must continue to develop long-range, offensive systems such as low-observable manned and remotely piloted strike aircraft, precision missiles, and intelligence, surveillance, and reconnaissance (ISR) platforms to penetrate heavily defended A2/AD environments. This approach will increase the survivability of U.S. forward-deployed assets and power projection capabilities and thus bolster deterrence and U.S. guarantees to America’s allies and friends. Asymmetric Challenges The increasing number of actors gaining access to advanced and dual-use technologies augments the potential for asymmetric attacks against the United States and its allies by those who are unable to match U.S. military capabilities. Those actors pose increasing challenges to the ability of the United States to project power through the global commons. Such attacks could target specific U.S. vulnerabilities, ranging from space assets to the financial, transportation, communications, and/or energy infrastructures, and to the food and water supply, to mention only the most obvious. Asymmetric attacks denying access to critical networks and capabilities may be the most cost-effective approach to circumventing traditional U.S. force advantages. The USAF and DoD must develop systems and technologies that can offset and defend against asymmetric capabilities. This will require a robust R&D program and enhanced USAF cooperation with its sister services and international partners and allies. Space Dominance Space is increasingly a contested domain where U.S. dominance is no longer assured given the growing number of actors in space and the potential for kinetic and non-kinetic attacks, including ASAT weapons, EMP, and jamming. As a result, the United States must protect vital space-based platforms and networks by reducing their vulnerability to attack or disruption and increasing the country’s resilience if an attack does occur. Required steps include hardening and incorporating stealth into next generation space systems and developing rapid replenishment capacity (including micro-satellite technologies and systems and new launch capabilities). At the same time, America must reduce its dependence on space capabilities with air-based substitutes such as high altitude, long endurance, and penetrating ISR platforms. Increased cooperation among the services and with U.S. allies to develop such capabilities will also be paramount. Cyber Security Cyber operations are vital to conducting USAF and joint land, sea, air, and space missions. Given the significance of the cyber threat (private, public, and DoD cyber and information networks are routinely under attack), the United States is attempting to construct a layered and robust capability to detect and mitigate cyber intrusions and attacks. The USAF’s cyber operations must be capable of operating in a contested cyber domain to support vital land, sea, air, and space missions. USAF cyberspace priorities include developing capabilities to protect essential military cyber systems and to speed their recovery if an attack does occur; enhancing the Air Force’s capacity to provide USAF personnel with the resolution of technical questions; and training/recruitment of personnel with cyber skills. In addition, the USAF and DoD need to develop technologies that quickly and precisely attribute attacks in cyberspace. Cyber attacks can spread quickly among networks, making it extremely difficult to attribute their perpetrator, and therefore to develop a deterrence strategy based on retaliation. In addition, some cyber issues are in the legal arena, including questions about civil liberties. It is likely that the trend of increased military support to civil authorities (for example, in disaster relief operations) will develop in the cyber arena as well. These efforts will entail greater service, interagency, international, and private-sector collaboration. Organizational Change and Joint Force Operations To address growing national security challenges and increasing fiscal constraints, and to become more effective, the joint force needs to adapt its organizations and processes to the exigencies of the information age and the security setting of the second decade of the twenty-first century. This entails developing a strategy that places increased emphasis on joint operations in which each service acts in greater concert with the others, leverages capacities across the services (two land services, three naval services, and five air services) without duplicating efforts, and encourages interoperability. This would provide combatant commanders (CCDRs) with a greater range of capabilities, allowing heightened flexibility to use force. A good example of this approach is the Air-Sea Battle concept being developed jointly by the Air Force and Navy, which envisions heightened cooperation between the two services and potentially with allies and coalition partners. Intelligence, Surveillance, and Reconnaissance Capabilities There is an increasing demand for ISR capabilities able to access and persist in contested airspace in order to track a range of high-value mobile and hard-to-find targets, such as missile launchers and underground bunkers. This increases the need for stealthy, survivable systems and the development of next-generation unmanned platforms. The USAF must continue to emphasize precision targeting, both for strike and close-air-support missions. High-fidelity target identification and discrimination enabled by advanced radars and directed-energy systems, including the ability to find, track, and target individuals within a crowd, will provide battlefield commanders with improved options and new opportunities for leveraging joint assets. Engagement and International Security Cooperation Allies and coalition partners bring important capabilities from which the USAF and other services have long benefited. For example, allies and coalition partners can provide enhanced situational awareness and early warning of impending crises as well as assist in understanding the interests, motivations, traditions, and cultures of potential adversaries and prospective coalition partners. Moreover, foreign partner engagement and outreach are an avenue to influence partner and adversary perspectives, thus shaping the environment in ways favorable to U.S. national security interests. Engagement also may be a key to realizing another Air Force and joint priority: to sustain or gain access to forward operating bases and logistical infrastructure. This is particularly important given the growing availability of A2/AD assets and their ability to impede U.S. power projection capabilities. Procurement Choices and Affordability The USAF needs to field capabilities to support current operations and pressing missions while at the same time pursuing promising technologies to build the force of the future. Affordability, effectiveness, time urgency, and industrial base issues inevitably shape procurement choices and reform. The Air Force must maintain today’s critical assets while also allocating resources to meet future needs. Given the long lifespan anticipated for many weapon systems, planners need to make the most reliable cost estimates and identify problems at the outset of a weapons system’s development phase so that they can be corrected as early and cost-effectively as possible. Support to Civil Authorities As evidenced in the aftermath of the 2010 earthquakes in Haiti and Chile (the Chile earthquake hit after this conference), the USAF has a vital role to play in the U.S. response to international relief operations and support to civil authorities. In Haiti, the USAF reopened the airport and deployed contingency response elements, while also providing ISR support for the joint forces in the theater. In Chile, USAF satellite communication capabilities were critical to the recovery and relief efforts. USAF civil support roles are likely to grow to include greater use of the Reserve Components. Consequently, USAF planners should reassess the active and reserve component mix of forces and capabilities to identify potential mobilization and requirement shortfalls. CLOSING CONFERENCE THOUGHTS A recurring conference theme was the need for the USAF to continue to examine specific issues of opportunity and vulnerability more closely. For example, a future initiative could include focused working groups that would examine such questions and issues as: • How can air, space, and cyberspace capabilities best support deterrence, preserve U.S. freedom of action, and support national objectives? • How should the USAF leadership reconceptualize its vision, institutional identity, and force posture to align as closely as possible with the future national security setting? • What is the appropriate balance between high-end and low-end air and space capabilities that will maximize military options for national decision makers, given emerging threats and fiscal constraints? • What are the opportunities, options, and tradeoffs for investment and divestment in science and technology, infrastructure, and programmed capabilities? • What are additional interdependent concepts, similar to Air-Sea Battle, that leverage cross-service investments to identify and foster the development of new joint capabilities? • What are alternative approaches to officer accessions and development to support shifting and emerging Air Force missions, operations, and force structure, including cyber warfare? • How can the USAF best interact with Congress to help preserve or refocus the defense-industrial base as well as to minimize mandates and restrictions that weigh on future Air Force investments? Finally, the USAF must continue to be an organization that views debate, as the Chief of Staff of the Air Force put it in his opening conference address, “…as the whetstone upon which we sharpen our strategic thinking.” This debate must also be used in pursuit of political support and to ensure that the USAF maintains and develops critical capabilities to support U.S. national security priorities. The 38th IFPA-Fletcher Conference on National Security Strategy and Policy was conceived as a contribution to that debate. Almost a century has passed since the advent of airpower and Billy Mitchell’s demonstration of its operational potential with the sinking of the Ostfriesland on July 21, 1921. For most of that time, the United States has benefitted from the rapid development of air and space power projection capabilities, and, as a result, it has prevailed in successive conflicts, contributed to war deterrence and crisis management, and provided essential humanitarian relief to allies and friends around the world. As we move into the second decade of the twenty-first century, the U.S. Air Force (USAF), like its service counterparts, is re-assessing strategies, operational concepts, and force structure. Across the conflict spectrum, security challenges are evolving, and potential adversaries–state and non-state actors–are developing anti-access and other asymmetric capabilities, and irregular warfare challenges are becoming more prevalent. The potential exists for “hybrid” warfare in which state adversaries and/or non-state actors use a mix of conventional and unconventional capabilities against the United States, a possibility made more feasible by the diffusion of such capabilities to a larger number of actors. Furthermore, twenty-first-century security challenges and threats may emanate from highly adaptive adversaries who ignore the Geneva Conventions of war and use military and/or civilian technologies to offset our military superiority. As it develops strategy and force structure in this global setting, the Air Force confronts constraints that will have important implications for budget and procurement programs, basic research and development (R&D), and the maintenance of critical skills, as well as recruitment, education, training, and retention. Given the dynamic nature of the security setting and looming defense budget constraints, questions of where to assume risk will demand bold, innovative, and decisive leadership. The imperative for joint operations and U.S. military-civilian partnerships is clear, underscoring the need for a whole-of-government and whole-of-society approach that encompasses international and non-governmental organizations (NGOs). THE UNITED STATES AS AN AEROSPACE NATION: CHALLENGES AND OPPORTUNITIES In his address opening the conference, General Norton A. Schwartz, Chief of Staff of the Air Force (CSAF), pointed out how, with its inherent characteristics of speed, range, and flexibility, airpower has forever changed warfare. Its advent rendered land and maritime forces vulnerable from the air, thus adding an important new dimension to warfare. Control of the air has become indispensable to national security because it allows the United States and friendly forces to maneuver and operate free from enemy air attack. With control of the air the United States can leverage the advantages of air and space as well as cyberspace. In these interdependent domains the Air Force possesses unique capabilities for ensuring global mobility, long-range strike, and intelligence, surveillance, and reconnaissance (ISR). The benefits of airpower extend beyond the air domain, and operations among the air, land, maritime, space, and cyber domains are increasingly interdependent. General Schwartz stated that the Air Force’s challenge is to succeed in a protracted struggle against elements of violent extremism and irreconcilable actors while confronting peer and near-peer rivals. The Air Force must be able to operate with great precision and lethality across a broad spectrum of conflict that has high and low ends but that defies an orderly taxonomy. Warfare in the twenty-first century takes on a hybrid complexity, with regular and irregular elements using myriad tools and tactics. Technology can be an enabler but can also create weaknesses: adversaries with increased access to space and cyberspace can use emerging technologies against the United States and/or its allies. In addition, the United States faces the prospect of the proliferation of precision weapons, including ballistic and cruise missiles as well as increasingly accurate mortars, rockets, and artillery, which will put U.S. and allied/coalition forces at risk. In response to mounting irregular warfare challenges American leaders have to adopt innovative and creative strategies. For its part, the USAF must develop airmen who have the creativity to anticipate and plan for this challenging environment. Leadership, intellectual creativity, capacity, and ingenuity, together with innovative technology, will be crucial to addressing these challenges in a constrained fiscal environment. System Versatility In meeting the broad range of contingencies – high, low, regular, irregular, and hybrid – the Air Force must maintain and develop systems that are versatile, both functionally (including strike or ISR) and in terms of various employment modes, such as manned versus remotely piloted, and penetrating versus stand-off systems. General Schwartz emphasized the need to be able to operate in conflict settings where there will be demands for persistent ISR systems able to gain access to, and then loiter in, contested or denied airspace. The targets to be identified and tracked may be mobile or deeply buried, of high value, and difficult to locate without penetrating systems. General Schwartz also called attention to the need for what he described as a “family of systems” that could be deployed in multiple ways with maximum versatility depending on requirements. Few systems will remain inherently single purpose. Indeed, he emphasized that the Air Force must purposefully design versatility into its new systems, with the majority of future systems being able to operate in various threat environments. As part of this effort further joint integration and inter-service cooperation to achieve greater air-land and air-sea interoperability will continue to be a strategic necessity. Space Access and Control Space access, control, and situational awareness remain essential to U.S. national security. As potential rivals develop their own space programs, the United States faces challenges to its unrestricted access to space. Ensuring continuing access to the four global commons – maritime, air, space, and cyberspace – will be a major challenge in which the USAF has a key role. The Air Force has long recognized the importance of space and is endeavoring to make certain that U.S. requirements in and for space are met and anticipated. Space situational awareness is vital to America’s ability to help evaluate and attribute attacks. Attribution, of course, is essential to deterrence. The USAF is exploring options to reduce U.S. dependence on the Global Positioning System (GPS), which could become vulnerable to jamming. Promising new technologies, such as “cold atoms,” pseudolites, and imaging inertial navigation systems that use laser radar are being investigated as means to reduce our vulnerability. Cyber Capabilities The USAF continues to develop cyber capabilities to address opportunities and challenges. Cyber threats present challenges to homeland security and other national security interests. Key civilian and military networks are vulnerable to cyber attacks. Preparing for cyber warfare and refining critical infrastructure protection and consequence management will require new capabilities, focused training, and greater interagency, international, and private sector collaboration. Challenges for the Air Force General Schwartz set forth a series of challenges for the Air Force, which he urged conference participants to address. They included: • How can the Air Force better address the growing demand for real-time ISR from remotely piloted systems, which are providing unprecedented and unmatched situational awareness? • How can the USAF better guarantee the credibility and viability of the nation’s nuclear forces for the complex and uncertain security environment of this century? • What is the way ahead for the next generation of long-range strike and ISR platforms? What trade-offs, especially between manned and unmanned platforms, should the USAF consider? How can the USAF improve acquisition of such systems? How can the USAF better exploit the advantage of low-observables? • How can the Air Force better prepare itself to operate in an opposed network environment in which communications and data links will be challenged, including how to assure command and control (C2) in bandwidth-constrained environments? • In counter-land operations, how can the USAF achieve improved target discrimination in high collateral damage situations? • How should the USAF posture its overseas forces to ensure access? What basing structure, logistical considerations, andprotection measures are required to mitigate emerging anti-access threats? • How can the Air Force reduce its reliance on GPS to ensure operations in a GPS-denied environment? • How can the USAF lessen its vulnerability to petroleum shortages, rising energy prices, and resulting logistical and operational challenges? • How can the Air Force enhance partnerships with its sister services and the interagency community? How can it better collaborate with allies and coalition partners to improve support of national security interests? These issues were addressed in subsequent conference sessions. The opening session focused on the multidimensional and dynamic security setting in which the Air Force will operate in the years ahead. The session included a discussion of the need to prioritize necessary capabilities and to gauge “acceptable risks.” Previous Quadrennial Defense Reviews (QDRs) rested on the basic assumption that the United States would be able to support operations simultaneously or nearly simultaneously in two major regional contingencies, with the additional capacity to respond to smaller disaster-relief and/or stability operations missions. However, while the 2010 QDR1 maintains the need for U.S. forces to operate in two nearly simultaneous major wars, it places far greater emphasis on the need to address irregular warfare challenges. Its focus is maintaining and rebalancing U.S. force structure to fight the wars in which the United States is engaged today while looking ahead to the emerging security setting. The QDR further seeks to develop flexible and tailored capabilities to confront an array of smaller-scale contingencies, including natural disasters, perhaps simultaneously, as was the case with the war in Afghanistan, stability operations in Iraq, and the Haiti relief effort. The 2010 QDR highlights important trends in the global security environment, especially unconventional threats and asymmetric challenges. It suggests that a conflict with a near-peer competitor such as China, or a conflict with Iran, would involve a mix, or hybrid, of capabilities that would test U.S. forces in very different ways. Although predicting the future security setting is a very difficult if not an impossible exercise, the 2010 QDR outlines major challenges for the United States and its allies, including technology proliferation and diffusion; anti-access threats and the shrinking global basing infrastructure; the possibility of weapons of mass destruction (WMD) use against the U.S. homeland and/or against U.S. forces abroad; critical infrastructure protection and the massed effects of a cyber or space attack; unconventional warfare and irregular challenges; and the emergence of new issue areas such as Arctic security, U.S. energy dependence, demographic shifts and urbanization, the potential for resource wars (particularly over access to water), and the erosion or collapse of governance in weak or failing states. TECHNOLOGY DIFFUSION Technology proliferation is accelerating. Compounding the problem is the reality that existing multilateral and/or international export regimes and controls have not kept pace with technology, and efforts to constrain access are complicated by dual-use technologies and chemical/biological agents. The battlefields of the future are likely to be more lethal as combatants take advantage of commercially based navigation aids for precision guidance and advanced weapons systems and as global and theater boundaries disappear with longer-range missile systems becoming more common in enemy arsenals. Non-state entities such as Hezbollah have already used more advanced missile systems to target state adversaries. The proliferation of precision technologies and longer-range delivery platforms puts the United States and its partners increasingly at risk. This proliferation also is likely to affect U.S. operations from forward operating locations, placing additional constraints on American force deployments within the territories of allies. Moreover, as longer-range ballistic and cruise missiles become more widespread, U.S. forces will find it increasingly difficult to operate in conflicts ranging from irregular warfare to high-intensity combat. As highlighted throughout the conference, this will require that the United States develop and field new-generation low-observable penetration assets and related capabilities to operate in non-permissive environments. PROLIFERATION TRENDS The twenty-first-century security setting features several proliferation trends that were discussed in the opening session. These trends, six of which were outlined by Dr. Robert L. Pfaltzgraff, Jr., President of the Institute for Foreign Policy Analysis, and Shelby Cullom Davis Professor of International Security Studies, The Fletcher School, Tufts University, framed subsequent discussions. First, the number of actors–states and armed non-state groups–is growing, together with strategies and capabilities based on more widely available technologies, including WMD and conventional weapons. This is leading to a blurring of categories of warfare that may include state and non-state actors and encompass intra-state, trans-state, and inter-state armed conflict as well as hybrid threats. Second, some of these actors subscribe to ideologies and goals that welcome martyrdom. This raises many questions about dissuasion and deterrence and the need to think of twenty-first-century deterrence based on offensive and defensive strategies and capabilities. Third, given the sheer numbers of actors capable of challenging the United States and their unprecedented capabilities, the opportunity for asymmetric operations against the United States and its allies will grow. The United States will need to work to reduce key areas of vulnerability, including its financial systems, transportation, communications, and energy infrastructures, its food and water supply, and its space assets. Fourth, the twenty-first-century world contains flashpoints for state-to-state conflict. This includes North Korea, which possesses nuclear weapons, and Iran, which is developing them. In addition, China is developing an impressive array of weaponry which, as the Commander of U.S. Pacific Command stated in congressional testimony, appears “designed to challenge U.S. freedom of action in the region and, if necessary, enforce China’s influence over its neighbors – including our regional allies and partners’ weaponry.”2 These threats include ballistic missiles, aircraft, naval forces, cyber capabilities, anti-satellite (ASAT) weapons, and other power-projection capabilities. The global paradigm of the twenty-first century is further complicated by state actors who may supply advanced arms to non-state actors and terrorist organizations. Fifth, the potential for irregular warfare is rising dramatically with the growth of armed non-state actors. The proliferation of more lethal capabilities, including WMD, to armed non-state actors is a logical projection of present trends. Substantial numbers of fractured, unstable, and ungoverned states serve as breeding grounds of armed non-state actors who will resort to various forms of violence and coercion based on irregular tactics and formations and who will increasingly have the capabilities to do so. Sixth, the twenty-first-century security setting contains yet another obvious dimension: the permeability of the frontiers of the nation state, rendering domestic populations highly vulnerable to destruction not only by states that can launch missiles but also by terrorists and other transnational groups. As we have seen in recent years, these entities can attack U.S. information systems, creating the possibility of a digital Pearl Harbor. Taken together, these trends show an unprecedented proliferation of actors and advanced capabilities confronting the United States; the resulting need to prepare for high-end and low-end conflict; and the requirement to think of a seamless web of threats and other security challenges extending from overseas to domestic locales. Another way to think about the twenty-first-century security setting, Dr. Pfaltzgraff pointed out, is to develop scenarios such as the following, which are more illustrative than comprehensive: • A nuclear Iran that engages in or supports terrorist operations in a more assertive foreign policy • An unstable Pakistan that loses control of its nuclear weapons, which fall into the hands of extremists • A Taiwan Straits crisis that escalates to war • A nuclear North Korea that escalates tensions on the Korean peninsula What all of these have in common is the indispensable role that airpower would play in U.S. strategy and crisis management.

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#### Bipartisan anti-china momentum ensures COMPETES passes now and maintains tech leadership, but its narrow

Sayers & Kanapathy 2/15 [ Eric Sayers, a senior vice president at Beacon Global Strategies, and Ivan, a vice president at Beacon Global Strategies, both guest contributors for Foreign Policy magazine “America is Showering China with New Restrctions” https://foreignpolicy.com/2022/02/15/us-china-economic-financial-decoupling-controls-restrictions-sanctions/]

In recent years, Washington’s China policies have expanded rapidly into technology sectors such as telecommunications, semiconductors, data security, and financial services. Growing bipartisan concern about Beijing’s actions and intentions have fueled these developments, with little difference between the Trump and Biden administrations or between the White House and Congress. The result has been a flurry of new restrictions—including on exports, imports, direct investment, and financial securities—that are fundamentally reshaping the U.S.-China economic relationship. Cross-border business travel between the United States and China, essentially halted for the past two years due to the COVID-19 pandemic, is unlikely to fully rebound because of increased caution and suspicion on both sides of the Pacific. At the same time as this more defensive approach to economic and technology competition with China has taken root, Congress has also gone on the offensive by moving to appropriate new funding to areas deemed critical to maintaining U.S. competitive advantages in technology, manufacturing, and defense. The current depth and breadth of these approaches were hard to imagine just a few years ago. The corporate sector, besides facing increased government action with respect to doing business with China, must also contend with shifting public opinion and increased investor scrutiny—for example, on human rights issues along companies’ supply lines in China. Looking ahead, 2022 promises a continuation of these trends, which will have far-reaching impacts across multiple business sectors. In just the last three years, Washington has enacted a raft of policy changes and regulation related to economic competition with China. In early 2018, the Trump administration applied and expanded tariffs on Chinese goods in response to Beijing’s unfair practices, including industrial subsidies, forced technology transfer, and state-sponsored intellectual property theft. Leveraging new laws passed in 2018, Washington expanded the use of export controls in defense technology, imposed stricter vetting of foreign investments in strategic U.S. industries, and restricted the procurement of equipment and services from five Chinese information technology companies, the most prominent of which was Huawei. The pace and scope of Washington’s policymaking have accelerated in ways not previously considered possible. In addition, U.S. border agencies shifted their sights from primarily countering terrorists to screening for nontraditional intelligence collectors—for example, journalists, researchers, and businesspeople, who are frequently used by Beijing to gather information—as well as counterfeit goods and goods produced with forced labor. Using presidential emergency powers, the Trump administration also created regimes to remove untrusted contractors from U.S. IT infrastructure projects and block Americans from investing in companies that work with the Chinese military. To Beijing’s consternation, the Biden administration has signaled its general agreement with all these approaches—and even expanded the investment ban to include Chinese surveillance technology companies. While close U.S. allies in Europe and Asia have been reluctant to impose a similarly broad sweep of policies, the Biden administration has achieved significant rhetorical alignment on defining the challenges posed by Beijing. Under pressure from the Trump administration, several U.S. allies turned away from Huawei, blocked inbound Chinese technology investments, and held up the shipment of critical semiconductor manufacturing equipment to China. However, Europe has yet to follow the United States in imposing real costs on China for its ongoing human rights violations, even though this is a declared point of convergence between the United States and the European Union. For its part, Congress has passed a slew of China-related bills. Among other actions, legislators have reformed inbound investment screening, forced the delisting of Chinese stocks that do not comply with U.S. accounting practices, expanded requirements for the U.S. Defense Department to list Chinese companies assisting the People’s Liberation Army, strengthened sanctions authorities in response to atrocities in Xinjiang and repression in Hong Kong, presumed that all goods produced in Xinjiang are made with forced labor (and thus banned as imports), and prohibited the federal purchase of Chinese telecommunications equipment. While Washington mainly focused on defensive measures in recent years, Congress began in 2020 to balance its approach with a more offensive agenda. Efforts to invest in semiconductor manufacturing, accelerate the adoption of 5G telecommunications capabilities, and reorganize the National Science Foundation to focus on increasing U.S competitiveness were all added to the Senate’s U.S. Innovation and Competition Act. The House of Representatives, in turn, recently passed a similar bill—the America COMPETES Act of 2022—so the prospects for final passage of a bipartisan competitiveness bill sometime this spring look strong.This flurry of activity raises the question of what comes next. Looming issues such as rising inflation, possible new variants of COVID-19, and Russian aggression toward Ukraine could take Washington’s attention away from China policy, at least temporarily. At the same time, there is a strong bipartisan consensus—between the White House and Congress—on China. In particular, there are five policy areas where further action appears imminent this year.

#### Space policy causes immense partisan backlash that wrecks the delicate balance

Dreier 16 [Casey Dreier, Chief Advocate & Senior Space Policy Adviser for The Planetary Society, April 13, 2016. “Does Presidential Intervention Undermine Consensus for NASA?” https://www.planetary.org/blogs/casey-dreier/2016/0413-does-a-strong-president-help-or-hurt-consensus-on-NASA.html]

To see how this happens, I recommend reading the book “[Beyond Ideology](http://smile.amazon.com/Beyond-Ideology-Politics-Principles-Partisanship/dp/0226470768/ref=smi_www_rco2_go_smi_g2243582042?_encoding=UTF8&*Version*=1&*entries*=0&ie=UTF8)” by Frances Lee. The author’s larger premise is that issues having no intrinsic relation to stated party ideology have become increasingly polarized in recent years. This is a function of the two party nature of our political system. If your party coalition wins, the other one loses. It’s [It is] zero-sum. Your party can win in one of two ways: you can make a better pitch to voters by demonstrating the superiority of your agenda; or you can undermine and stymie the agenda of the opposition party, making them unpopular with voters, and pick up the seats that they lose. Since you’re the only other political party, you gain in either scenario. I’m not sure if you’ve noticed, but the “undermine and stymie” approach has been popular for quite some time now in the U.S. Congress. Given this situation, the President and their policies naturally become the symbolic target of the opposition party. Anything promoted by the President effectively induces opposition by association. Lee demonstrates the magnitude of this induced polarization on various types of issues. For highly polarized issues like the role of government in the economy, or social issues, the impact is minimal—the opposition has already been clearly defined and generally falls into clearly defined ideologies of the Republican and Democratic parties. But for issues that do not fit readily into a predefined political ideology—like space—the induced polarization by the President can be significant. In fact, Lee showed that space, science, and technology issues incur the greatest increase in partisanship based on their inclusion in the Presidential agenda. One need only look to at the responses by political operatives of the opposing party to the strong human spaceflight proposals by [Barack Obama in 2010](http://www.shelby.senate.gov/public/index.cfm/mobile/newsreleases?ID=25F3AD2E-802A-23AD-4960-F512B9E205D2), [George W. Bush in 2004](http://www.nbcnews.com/id/3950099/ns/technology_and_science-space/t/bush-sets-new-course-moon-beyond/#.Vw3UMRMrKHo), and [George H.W. Bush in 1989](http://www.nytimes.com/1989/07/21/us/president-calls-for-mars-mission-and-a-moon-base.html) to see this reflected in recent history. This isn’t to say that Presidents can’t have a significant impact on the space program. Clearly they can. But the broad consensus needed for stability after their departure from office may be undermined by the very priority they gave it during their tenure. It what amounts to a mixed blessing for NASA, the U.S. space program does have an unusually strong bipartisan group of politicians who support the program due to NASA centers in a variety of states throughout the union. Berger notes this throughout his article, and it does, in a way, act as force that is resistant to change for good and bad. This mitigates somewhat the pure polarization seen on other science and technology issues. But for a Journey to Mars—a major effort that would, at best, require stability and significant funding over many Presidential administrations—that may not be enough. Perhaps the solution is for the next President to maintain a light touch on space. Maybe they should speak softly through the budget process, and avoid the Kennedyesque speeches and declarations to Congress that induce the types of partisanship we so dearly need to avoid.

#### The bill is uniquely key to solve Chinese and Russian tech supremacy

Seattle 2/16 [Seattle Times, leading newspaper serving the greater Seattle area. “Congress must unite behind China competitiveness bill” https://www.hawaiitribune-herald.com/2022/02/16/opinion/congress-must-unite-behind-china-competitiveness-bill/]

Under the shadow of growing tensions with Beijing, the U.S. House of Representatives has approved a bill that would help the United States remain economically competitive with China. It will now need to be reconciled with similar legislation that passed the Senate last year.

Congress must not allow partisan squabbles to scuttle this vital proposal.

Republicans, who supported the U.S. Senate’s United States Innovation and Competition Act, have so far turned their back on the House version, known as the America COMPETES Act, saying the bill includes unacceptable provisions related to labor, foreign policy and climate change.

While differences exist — and their merits are worth debating — both bills promise to fund the critical need to address supply-chain vulnerabilities and increase computer chip production in the U.S. They also include a major investment in ensuring America’s place as the leader in scientific research and innovation.

These similarities should be the focus, said U.S. Sen. Maria Cantwell, D-Wash., who heads the Senate Committee on Commerce, Science and Transportation. Both bills call for a $52 billion investment in the semiconductor industry, about $160 billion for research and development agencies such as the National Science Foundation and the Department of Energy, as well as funding to reduce STEM workforce gaps.

“This would be the largest five-year commitment to public R&D in our nation’s history,” Cantwell said. “We need it for the job growth. We need it to stay competitive.”

The legislation would also create some manufacturing jobs in the U.S., but the benefit to American workers may be strongest in improved protection from global market volatility, said Jeffrey Kucik, an associate professor at the University of Arizona.

“It’s about insulating the domestic market from unpredictable global forces,” he said. “Whether that’s the pandemic, or the Great Recession, or shocks associated with the escalation of the U.S.-China trade war.”

For their part, Chinese officials have repeatedly labeled these legislative efforts as the product of a “Cold War mentality.”

It was ironic, then, to see President Xi Jinping of China and Russian President Vladimir Putin warmly meet on the sidelines of the Winter Olympics in Beijing. Even more so was their joint statement, which sent a message of cooperation between the two countries not seen since Josef Stalin and Mao Zedong.

Their statement, which includes support for each other’s foreign policies, underlines the precarious situation surrounding existential threats to Ukraine and Taiwan. It also underlines the need for Congress to act.

#### Chinese tech leadership causes nuke war

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Rather, we should think more broadly about how new technology might affect global politics, and, for this, it is helpful to turn to scholarly international relations theory. The dominant theory of the causes of war in the academy is the “bargaining model of war.” This theory identifies rapid shifts in the balance of power as a primary cause of conflict.

International politics often presents states with conflicts that they can settle through peaceful bargaining, but when bargaining breaks down, war results. Shifts in the balance of power are problematic because they undermine effective bargaining. After all, why agree to a deal today if your bargaining position will be stronger tomorrow? And, a clear understanding of the military balance of power can contribute to peace. (Why start a war you are likely to lose?) But shifts in the balance of power muddy understandings of which states have the advantage.

You may see where this is going. New technologies threaten to create potentially destabilizing shifts in the balance of power.

For decades, stability in Europe and Asia has been supported by US military power. In recent years, however, the balance of power in Asia has begun to shift, as China has increased its military capabilities. Already, Beijing has become more assertive in the region, claiming contested territory in the South China Sea. And the results of Russia’s military modernization have been on full display in its ongoing intervention in Ukraine.

Moreover, China may have the lead over the United States in emerging technologies that could be decisive for the future of military acquisitions and warfare, including 3D printing, hypersonic missiles, quantum computing, 5G wireless connectivity, and artificial intelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, “Whoever leads in AI will rule the world.”

If China or Russia are able to incorporate new technologies into their militaries before the United States, then this could lead to the kind of rapid shift in the balance of power that often causes war.

If Beijing believes emerging technologies provide it with a newfound, local military advantage over the United States, for example, it may be more willing than previously to initiate conflict over Taiwan. And if Putin thinks new tech has strengthened his hand, he may be more tempted to launch a Ukraine-style invasion of a NATO member.

Either scenario could bring these nuclear powers into direct conflict with the United States, and once nuclear armed states are at war, there is an inherent risk of nuclear conflict through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation.

This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to preserve prevailing power balances more broadly.

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#### We stopped appeasing Russia – they’ll pocket concessions from coop and increase aggression – tensions aren’t the result of understandings but hardened differences

Haddad **and Polakova** 18 [Benjamin Haddad Director, Future Europe Initiative - Atlantic Council. Alina Polyakova Director, Project on Global Democracy and Emerging Technology Fellow - Foreign Policy, Center on the United States and Europe. Don’t rehabilitate Obama on Russia. March 5, 2018. https://www.brookings.edu/blog/order-from-chaos/2018/03/05/dont-rehabilitate-obama-on-russia/]

Obama’s much-ballyhooed “Reset” with Russia, launched in 2009, was in keeping with optimistic attempts by every post-Cold War American administration to improve relations with Moscow out of the gate. Seizing on the supposed change of leadership in Russia, with Dmitry Medvedev temporarily taking over the presidency from Vladimir Putin, Obama’s team quickly turned a blind eye to Russia’s 2008 war with Georgia, which in retrospect was Putin’s opening move in destabilizing the European order. Like George W. Bush before him, Obama vastly overestimated the extent to which a personal relationship with a Russian leader could affect the bilateral relationship. U.S.-Russia disagreements were not the result of misunderstandings, but rather the product of long-festering grievances. Russia saw itself as a great power that deserved equal standing with the U.S. What Obama saw as gestures of good will—such as the 2009 decision to scrap missile defense plans for Poland and the Czech Republic—Russia interpreted as a U.S. retreat from the European continent. Moscow pocketed the concessions and increasingly inserted itself in European affairs. The Kremlin was both exploiting an easy opportunity and reasserting what it thought was its historic prerogative.

Though Russia’s invasion of Ukraine in 2014 was the final nail in the coffin of the Reset, President Obama remained reluctant to view Moscow as anything more than a local spoiler, and thought the whole mess was best handled by Europeans. France and Germany spearheaded the Minsk ceasefire process in 2014-2015, with U.S. support but without Washington at the table. The Obama administration did coordinate a far-ranging sanctions policy with the European Union—an important diplomatic achievement, to be sure. But to date, the sanctions have only had a middling effect on the Russian economy as a whole (oil and gas prices have hurt much more). And given that sanctions cut both ways—potential value is destroyed on both sides when economic activity is systematically prohibited—most of the sacrifice was (and continues to be) born by European economies, which have longstanding ties to Russia. In contrast, the costs of a robust sanctions policy have been comparatively minor in the United States; Obama spent little political capital to push them through at home. The Obama administration also sought to shore up NATO’s eastern flank through the European Reassurance Initiative (ERI), which stationed rotating troops in Poland and the Baltics while increasing the budget for U.S. support. Nevertheless, the president resisted calls from Congress, foreign policy experts, and his own cabinet to provide lethal weapons to Ukraine that would have raised the costs on Russia and helped Kyiv defend itself against Russian military incursion into the Donbas. As Obama told Jeffrey Goldberg, he viewed any deterrent moves by the United States as fundamentally not credible, because Russia’s interests clearly trumped our own; it was clear to him they would go to war much more readily that the United States ever would, and thus they had escalatory dominance. Doing more simply made no sense to Obama. This timid realpolitik was mixed up with a healthy dose of disdain. Obama dismissed Russia as a “regional power” that was acting out of weakness in Ukraine. “The fact that Russia felt it had to go in militarily and lay bare these violations of international law indicates less influence, not more,” Obama said at the G7 meeting in 2014. This line has not aged well. Obama’s attitudes on Russia reflected his administration’s broadly teleological, progressive outlook on history. Russia’s territorial conquest “belonged in the 19th century.” The advance of globalization, technological innovation, and trade rendered such aggression both self-defeating and anachronistic. The biggest mistake for America would be to overreact to such petty, parochial challenges. The 2015 National Security Strategy favored “strategic patience”. But was it patience… or passivity? As its actions in 2016 proved, Russia is very much a 21st century power that understands how to avail itself of the modern tools available to it, often much better than we do ourselves. The same intellectual tendencies that shaped Obama’s timid approach to Ukraine were reflected in his administration’s restrained response as evidence of Russian electoral interference began to emerge in the summer of 2016. Starting in June, intelligence agencies began reporting that Russian-linked groups hacked into DNC servers, gained access to emails from senior Clinton campaign operatives, and were working in coordination with WikiLeaks and a front site called DCLeaks to strategically release this information throughout the campaign cycle. By August, Obama had received a highly classified file from the CIA detailing Putin’s personal involvement in covert influence operations to discredit the Clinton campaign and disrupt the U.S. presidential elections in favor of her opponent, Donald Trump. That fall through to his departure from the White House, the president and his key advisers struggled to find an appropriate response to the crime of the century. But out of all the possible options, which included a cyber offensive on Russia and ratcheted up sanctions, the policy that was adopted in the final months of Obama’s term was, characteristically, cautious. Obama approved additional narrow sanctions against Russian targets, expelled 35 Russian diplomats, and shut down two Russian government compounds. It’s true that Obama faced a difficult political environment that constrained his ability to take tougher measures. Republican opponents would have surely decried any loud protests as a form of election meddling on Hillary Clinton’s behalf. Donald Trump was already flogging the narrative that the elections were rigged against him. And anyway, Clinton seemed destined to win; she would tend to the Russians in her own time, the thinking went. But just as with the decision to not provide weapons to Ukraine, the Obama administration also fretted about provoking Russia into taking even more drastic steps, such as hacking the voting systems or a cyber attack on critical infrastructure. In the end, the administration’s worries proved to be paralyzing. “I feel like we sort of choked,” one Obama administration official told the Washington Post. Much ink has been spilled over President Trump’s effusive praise for Putin and his brutal regime. “You think our country’s so innocent?” candidate Trump famously replied to an interviewer listing the many human rights abuses of Putin’s Russia, including the harassment and murder of journalists. Obama, on the other hand, never had any ideological or psychological sympathy for Putin or Putinism. By the end of his second term, the two men were barely on speaking terms, the iciness of their encounters in full public view. For most of Obama’s two terms, however, this personal animosity did not translate into tougher policies. Has the Trump administration been tougher on Russia than Obama, as the president claims? Trump’s own boasting feels like a stretch, especially given how he seems to have gone out of his way to both disparage NATO and praise Putin during the course of his first year in office. Still, many of his administration’s good policies have been obscured by the politics of the Mueller investigation and the incessant furor kicked up by the president’s tweets. As Tom Wright has noted, the Trump administration seems to pursue two policy tracks at the same time: the narrow nationalism of the president’s inflammatory rhetoric openly clashing with the seriousness of his administration’s official policy decisions.

These tensions are real, but all too often they become the story. Glossed over is the fact that President Trump has appointed a string of competent and widely respected figures to manage Russia policy—from National Security Council Senior Director Fiona Hill to Assistant Secretary of State for European affairs Wess Mitchell to the Special Envoy for Ukraine Kurt Volker. The Trump administration is, in fact, pursuing concrete policies pushing back on Russian aggression that the Obama administration had fervently opposed. The National Security Strategy of 2017, bringing a much-needed dose of realism to a conversation too often dominated by abstractions like the “liberal world order”, singles out both China and Russia as key geopolitical rivals. During Trump’s first year, the administration approved the provision of lethal weapons to Ukraine, shut down Russia’s consulate in San Francisco as well as two additional diplomatic annexes, and rather than rolling back sanctions, Trump signed into law additional sanctions on Russia, expanded LNG sales to a Europe dependent in Russian gas imports, and increased the Pentagon’s European Reassurance Initiative budget by 40 percent. (A president who berated U.S. investments for European defense has actually dramatically increased American military presence on Europe’s threatened borders.) While many of these policies may have been implemented despite rather than because of the president—on the expansion of sanctions in particular, Trump faced a veto-proof majority in Congress—credit should be given where credit is due.

The Trump administration’s sober policy decisions should not excuse the president’s praise for Vladimir Putin, nor his reckless undermining of America’s stated commitment to enforcing Article 5 during his first speech in front of NATO. But the fact remains that the U.S. is taking concrete steps to strengthen Europe against Russian aggression. And let’s not be coy about it: if the president’s strident complaining about unequal burden-sharing in NATO finally snaps European allies out of their complacency and helps spur military investment on the continent, this won’t be good news for Russia either. Indeed, he will have succeeded in moving the needle on an issue that has frustrated every one of his predecessors since 1989. Has Trump’s bluster, especially on Article 5, been cost-free? Hardly. Nevertheless, talking to diplomats around town suggests that after initial months of uneasiness, most Europeans have learned to deal with the Trump administration in a dispassionate and pragmatic manner that stands in stark relief with much of the hysteria that passes for commentary in the U.S.

Each administration should be judged on what it has achieved. At the end of the Obama’s two terms, Putin had elevated Russia to a credible revisionist power on the international stage. Russia annexed Crimea and occupied much of Eastern Ukraine; by successfully propping up the degenerate Assad regime, the Kremlin gained a veto on any possible political solution to Syria, and got a meaningful foothold in the broader region for the first time since Sadat threw Soviet advisors out; and its populist allies and fellow-travelers were on the rise in Europe, fueling both anti-Americanism and illiberalism; and most damning of all, it managed to meddle, almost unopposed, in U.S. politics—all on Obama’s watch.

There is plenty left to criticize in how the Trump administration has done things in its first year. The Trump administration’s apparent unwillingness to take steps to deter hostile foreign powers from meddling in American politics is inexcusably irresponsible. And in the Middle East, the Trump administration seems hell-bent on following Obama’s myopic policy of retreat and narrow preoccupation with fighting ISIS to the exclusion of all else. But despite the president’s campaign promises, his administration has been the first in the post-Cold War era to not try for a “Reset” with Moscow. If Vladimir Putin wanted to sow chaos and confusion in Washington, he has succeeded beyond his wildest dreams. If he wanted a pliant ally in America, he has abjectly failed.

#### Russia space coop legitimatizes aspirations for international prestige and gives them leverage against the US – specifically validates the Ukraine invasion

Juul **19** [Peter Juul is a senior policy analyst at the Center for American Progress. "Trump’s Space Force Gets the Final Frontier All Wrong." https://foreignpolicy.com/2019/03/20/trumps-space-force-gets-the-final-frontier-all-wrong/]

His bombast didn’t just blur conceptual lines that ought to remain as sharp as they have been since the start of the space age in 1957. It revealed that the administration doesn’t grasp the nature of American leadership on the final frontier. Space exploration has certainly been driven by geopolitical concerns, but not by the narrow and reactive security calculations propelling the Trump administration’s Space Force proposal. As the public reaction to Opportunity’s demise shows, the real geopolitics of space exploration remain bound up with national pride and prestige—and not just for the United States. Just a week before Opportunity fell silent, Japan’s Hayabusa 2 probe landed on the asteroid Ryugu and began taking samples to return to Earth. A few days into the new year, China’s Chang’e 4 spacecraft successfully alighted on the far side of the Moon. India and the European Space Agency both maintain Mars orbiters that circle the planet alongside their American counterparts. Most recently, the launch of a lunar lander built by a private Israeli nonprofit has become a focus of national pride for Israel. More robotic explorers from even more nations are on the way: The United Arab Emirates plans to send its own probe to Mars in 2020, while Japan, China, and the European Space Agency all aim to launch complex robotic missions on the red planet and its moons over the next several years. India hopes to launch another Mars mission in the same time frame, and it appears set to send a lander and rover to the lunar surface sometime this year. For its part, South Korea intends to put a robotic explorer into lunar orbit in 2020. This new multinational flotilla of robotic explorers sailing through the solar system shouldn’t be surprising. Since the dawn of the space age, nations large and small have sought to demonstrate their technological skill and economic strength through daring feats of human and robotic spaceflight. More importantly, however, great powers have always seen space exploration as a matter of national prestige and international standing. A nation cannot be considered truly influential or powerful, it seems, unless it explores the heavens. And with relations between countries on the ground becoming more competitive, it is not surprising that the space race has picked back up too. To be sure, today’s quest for international status looks to be more friendly and productive than the Cold War competition between the Soviet Union and the United States. But it nevertheless marks a shift away from the collaborative climate that characterized the post-Cold War era—and represents an opportunity for the United States to show that it is still the standard-bearer of the future. U.S. President John F. Kennedy made it clear that the quest for national prestige defined his space program in his famous 1962 address on America’s nascent effort to put a man on the moon: “No nation which expects to be the leader of other nations can expect to stay behind in the race for space.” The Apollo program would demonstrate America’s superior ambition and skill to the world in spectacular fashion. Similar motives drove U.S. President Richard Nixon to approve the space shuttle program in the 1970s and U.S. President Ronald Reagan to push for a permanently inhabited space station in the 1980s. The end of the Cold War marked an end to the competitive epoch of space exploration. By the late 1980s, traditional allies like Canada, Japan, and the European Space Agency had all signed on to help NASA build President Reagan’s proposed space station. Presidents George W. Bush and Bill Clinton brought Russia into the project after the fall of the Soviet Union, and the construction and continued operation of the International Space Station over 20 years remains an impressive feat of global collaboration. Today, however, the United States finds itself on the precipice of a new and uncertain era. American astronauts continue to live and work aboard the International Space Station, but no American has rocketed into orbit from U.S. territory since the last flight of the space shuttle in 2011. And back on Earth, the United States and its democratic allies in Europe and Asia have settled into a worldwide competition for power and influence with Russia and China. Now Russia remains the only nation that regularly launches humans into space. Meanwhile, reflecting their growing power, new players like India and China have embarked on their own ambitious robotic exploration missions to Mars and the far side of the moon. National prestige and international standing are once more at the forefront of space exploration, as is competition between nations—especially between democracies and autocracies—to make impressive achievements on the final frontier. To navigate the new space competition, the United States must first recognize that national prestige and global standing are critical national interests worth pursuing and not pointless—and possibly dangerous—chest-thumping exercises. And peaceful space exploration provides the United States a huge opportunity to restore pride at home and burnish its prestige overseas. It certainly beats other—perhaps less productive—ways of seeking international status, such as stockpiling nuclear weapons. America starts with an advantage on this front despite not having launched astronauts from its own soil in almost eight years. Even after five decades, the Apollo moon landings continue to stir pride at home and admiration abroad. The space shuttle remains iconic nearly a decade after retirement, while the cosmic images beamed back from the Hubble Space Telescope continue to provoke awe and wonder. Astronauts aboard the International Space Station have turned their own camera lenses back toward Earth and given the world stunning images of our home planet. Robotic explorers from Voyager to the Mars rovers and New Horizons have kept the country on the cutting edge of discovery in our solar system. But this advantage won’t last forever. Without consistent and increased funding for NASA, ambitious programs of both human and robotic exploration will literally fail to leave the ground. Progress doesn’t entail an Apollo-level commitment of national resources, but instead funding comparable to the early 1990s. An additional $5 billion a year should get the job done, with $3 billion for human exploration and $2 billion for robotic missions. But funding isn’t everything, and in the new geopolitical context, democracy must be seen to work effectively. When it comes to space exploration, that means ratcheting back U.S. space cooperation with Russia as well as forgoing any equally intimate cooperation with China and its secretive space agency. The fact that the head of Russia’s space agency remains under U.S. sanctions for his role in Moscow’s military intervention in Ukraine illustrates the hazards involved in working with autocracies in space. Deep cooperation with autocratic powers in space gives autocracies a major point of diplomatic leverage over the United States, and more generally allows them to poach unearned international prestige by working on goals set and largely carried out by the United States. In today’s world, there’s no reason for the United States to give Russia or China this sort of standing by association.

#### Appeasing Russia shreds the NPT and causes Ukraine nuke prolif – extinction

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A major foreign policy challenge for the incoming U.S. administration will be how to deal with Russia’s new international assertiveness and foreign military adventures. Some signs in recent weeks, especially regarding the ongoing confrontation between Russia and Ukraine, point to a friendlier U.S. approach toward Moscow. Such a shift would have very serious consequences for the rest of the world.

A new rapprochement between Washington and Moscow may go far beyond the attempt by the administration of outgoing U.S. President Barack Obama to reset Russian-U.S. relations after the Russian-Georgian War in 2008. Supposedly, a dovish American approach toward the Kremlin would put U.S. concerns before those of countries and peoples currently in conflict with Russia.

To be sure, a number of probable members of the new administration, like Rex Tillerson, Mike Pompeo, and James Mattis, have voiced hawkish views on Russian imperialism. Yet apparently, U.S. President-elect Donald Trump and some of those advising him specifically on Russia, like Michael Flynn, Paul Manafort, and Carter Page, hope that U.S. tolerance of Russian freedom of movement in the former Soviet space—in particular, in Ukraine—would make the Kremlin more cooperative in other fields, such as the fight against Islamist terrorism, and in other regions, such as Syria or the Arctic.

However, one wonders whether Trump and other so-called Putinversteher in the incoming administration fully understand the stakes. The risks do not only concern the fundamental national interests of such pro-American countries as Ukraine, Estonia, Georgia, or Poland. The U.S. administration’s tolerance of Russia’s violation of Ukrainian territorial integrity would have larger implications for the future of humanity.

In view of the security assurances that the United States gave Ukraine under the 1994 Budapest Memorandum, a move by Washington to appease Moscow would be another crack in the splintering international nuclear nonproliferation regime. Acquiescence to Russia’s territorial gains in Ukraine would further undermine the already-shattered 1968 Nuclear Non-Proliferation Treaty (NPT), one of the world’s most important multilateral agreements.

Under the Budapest Memorandum, three official nuclear-weapons states under the NPT—Russia, the UK, and the United States—assured the inviolability of Ukraine’s borders. In two simultaneous but separate declarations, the other two official nuclear-weapons states, China and France, also expressed their respect for Ukraine’s political sovereignty. This was the core of a shrewd deal between the five guarantor states of the NPT and Ukraine (as well as Belarus and Kazakhstan), which had inherited parts of the Soviet nuclear arsenal. In exchange for Kyiv’s readiness to give up its weapons of mass destruction and join the NPT, the world’s five major nuclear powers explicitly acknowledged their obligation to observe and protect Ukraine’s territorial integrity.

But since 2014, if not before, Moscow has manifestly violated the Budapest Memorandum. As the agreement forms an important annex to the NPT, its violation through continuing Russian occupation of Ukraine’s territory undermines the logic of the international mechanism to prevent the spread of atomic weapons. That not only harshly punishes a country that voluntarily agreed to give up its nuclear weapons in exchange for security assurances. It also demonstrates how an official nuclear-weapons state can use its nuclear deterrence potential to implement and secure territorial expansion with military means.

Worse, two other official nuclear powers, Beijing and Paris, have implicitly assisted Russia in its subversion of the nonproliferation regime. Despite having expressed its respect for Ukraine’s territorial integrity, China did not support a 2014 UN General Assembly resolution against Russia’s annexation of Crimea. And several prominent French center-right parliamentarians have visited Crimea since its annexation by Russia, even though the French government that in 1994 declared its respect for Ukraine’s sovereignty was also a center-right administration (albeit under Socialist president François Mitterrand).

U.S. appeasement of Russia regarding its annexation of Crimea and interference in Ukraine’s eastern Donbas region would compound the effects of these earlier aberrations. The United States would be disregarding its earlier statements about Ukraine’s accession to the NPT and voluntary nuclear disarmament. The UK would be the only guarantor state of the NPT left that behaves more or less in line with the logic of the world’s nonproliferation regime with regard to Ukraine.

To be sure, against the background of other international crises, nuclear proliferation is currently not a salient topic of international affairs. Yet, preventing the spread of atomic weapons is one of the most sensitive issues for preserving world peace and securing human survival. The long-term repercussions of U.S. acquiescence to Russia’s annexation of Crimea for the international order would be grave.

## Case

### 1NC – TL

#### Top level – the aff has double turned themselves – the first half of the 1AC says US space development fractures the US-Russia alliance which causes counterbalancing, but their Forsyth card explicitly disagrees with that – it says that it is bad that the US is losing military power, and the only way to ensure deterrence is by rejecting multipolarity and alliances like with Russia, which the aff does the opposite of. This is offense for us – the aff limits American power for the sake of strengthening the US-Russia alliance, but that weakens unipolarity and encourages revisionism, which is the conclusion of their evidence.

### 1NC - Case

#### 1] No Sino-Russo alliance – autocracies turn on each other and Putin will be scared of China nonetheless because of geography.

Matthew Kroenig, PhD, 20 [Deputy Director of the Scowcroft Center for Strategy and Security at the Atlantic Council and a professor in the Department of Government and the Edmund A. Walsh School of Foreign Service at Georgetown University], "The United States Should Not Align With Russia Against China," Foreign Policy, 5-13-2020, <https://foreignpolicy.com/2020/05/13/united-states-should-not-align-russia-against-china-geopolitical-rivalry-authoritarian-partnership/> C.VC

But Russia and China will not form an effective alliance against the United States anytime soon. In a new book, I examined the strengths and weaknesses of democracies and autocracies in great-power competition and found that autocracies are poor alliance builders. The ease with which unconstrained dictators rapidly shift their country’s policies, backtrack on commitments, and dissemble are not traits that are conducive to building international partnerships.

Indeed, history shows that autocratic allies tend to fight each other more than the enemy. In spite of the Molotov-Ribbentrop Pact, Adolf Hitler turned on and invaded the Soviet Union, betraying his partner Joseph Stalin. The major military action of the Warsaw Pact during the Cold War was attacking its own members, Hungary and Czechoslovakia. The last time China and Russia were aligned, they nearly fought a nuclear war with each other in the 1969 Sino-Soviet border conflict. And Putin invaded Ukraine and Georgia at a time when these countries were involved in the Russian-led Commonwealth of Independent States.

Moreover, there are many conflicts of interest between Russia and China that will push them apart without any help from the United States. Depopulation in Russia’s Far East has led to fears that an expanding China will attempt a land grab. Russian colleagues report that Russia’s new nuclear-armed intermediate-range missiles are not aimed at NATO but meant to deter a rising China. More broadly, Moscow was the senior partner during the Cold War, and Putin will not be keen to now play second fiddle to Beijing.

While these autocratic powers may cooperate when convenient and opportunistically exploit U.S. weaknesses, they are not likely to form an enduring and coordinated alliance that will pose a major threat to the United States.

#### 2] Russian alliance bad and will never happen – can’t trust Putin, causes aggression in Europe, other allies better, the entirety of NATO gets pissed, they’re weak

Matthew Kroenig, PhD, 20 [Deputy Director of the Scowcroft Center for Strategy and Security at the Atlantic Council and a professor in the Department of Government and the Edmund A. Walsh School of Foreign Service at Georgetown University], "The United States Should Not Align With Russia Against China," Foreign Policy, 5-13-2020, <https://foreignpolicy.com/2020/05/13/united-states-should-not-align-russia-against-china-geopolitical-rivalry-authoritarian-partnership/> C.VC

Furthermore, there is little to be gained and much to be lost by attempting to sidle up to Moscow. Russia is unlikely to be open to helping Washington confront Beijing. While Russia does not want to subordinate itself to China, it does not want to be openly antagonistic toward it either.

In addition, Putin will not want to bolster the United States, the country he sees as his foremost enemy. In exchange for giving China a cold shoulder, Putin would almost certainly demand unpalatable concessions, such as granting Russia a sphere of influence in Eastern Europe and limiting U.S. missile defenses.

Even if Putin did promise to work with the United States, it would be a mistake to believe him. Putin cannot be trusted to abide by arms control agreements or cease-fires in eastern Ukraine. Why would Washington stake its strategy for the most important national security challenge of the 21st century on his word?

Finally, Russia does not bring much to the table. It is a declining power with a GDP smaller than Italy’s. When energy prices are high, Russia can afford an impressive military, but oil prices have been sagging, and Russia’s military spending has declined over the past several years.

Fortunately, the United States has other potential partners from which to choose. Democracies excel at building effective alliances, and the United States enjoys formal alliances with the 29 other members of NATO, as well as Japan, South Korea, and Australia. These nations account for 59 percent of global GDP. This compares favorably with only a combined 19 percent of global GDP for Russia and China.

The power of this alliance of free nations could be better harnessed in a global strategy to counter autocratic revisionist powers. The free world is concerned about the threats posed by China and Russia and are already cooperating on similar policy measures to counter them, but these efforts could be amplified with a coordinated global strategy led by the United States. Rather than pursue alliances with shifty dictators, Washington should play to its strengths and mobilize its existing strategic partnerships.

The United States and its democratic allies already enjoy the economic, military, and political power needed to excel in this new era of great-power competition. Beijing and Moscow, not Washington, are the ones that should worry about powerful and ideologically hostile enemies aligning against them.

#### 3] The US fears losing to China – perception of successful deterrence stops hegemonic war

Kim '19 [Min-hyung; 2019; associate professor of political science and international relations at Kyung Hee University; "A real driver of US–China trade conflict: The Sino–US competition for global hegemony and its implications for the future," International Trade, Politics, and Development, Vol. 3, No. 1, p. 30-40]

Since the end of the Second World War, the USA has undoubtedly been a global hegemon. With its preponderant military and economic strength, it has created a liberal international economic order and maintained it by promoting global free trade. USA sudden turn to protectionism under the banner of “America First” in the Trump administration illustrates “US fear” that its hegemony or Pax Americana is declining vis-à-vis China’s growing power. It also demonstrates that the USA now seeks to deter China from overtaking its hegemony so as to keep US hegemony as long as possible.

Currently, the USA and China are waging a trade war. What is important to note here is that the driving force of the trade war between the world’s two largest economies is more political than economic. That is to say, as China’s economic and political influence in the world vis-à-vis that of the USA increases, US fear about China’s power also grows. Under these circumstances, Washington makes every effort to assert its global dominance by deterring China’s challenge to its hegemony [13]. It is this sort of “US fear” about hegemonic power transition from Washington to Beijing that brought about US policies against the BRI, the AIIB, and Made in China 2015. The fear of hegemonic power transition is indeed a driving force for the US-launched trade war. Understood this way, the trade war between the USA and China may be a harbinger of a much larger-scale conflict between the two parties, since as PTT predicts, war is more likely to occur when the power gap between a declining hegemon and a rising challenger is getting closed.

As China’s economic, technological, military and political rise continues down the road, the USA will try to contain it in order to maintain its global hegemony. The obvious consequence of this seesaw game is the intensification of the Sino–US competition over global hegemony. The USA and China, the two most powerful states in the world, appear as if they were on a collision course. What this means is that so long as US fear about China’s overtaking US hegemony persists, a similar type of conflict between the two hegemonic powers is likely to occur in the future even if the current trade war is over.

#### 4] They’ve got uniqueness wrong –

#### A] US-Russian cooperation is at an all-time low, and all meaningful appeasement has stopped

Dougherty 20 [Michael Dougherty, senior writer at National Review, January 16, 2020. “Russian Fever Rising Again.” https://www.nationalreview.com/2020/01/democrats-embrace-conspiracy-theories-about-vladimir-putin-russia/]

The reality is that Russian and American relations are terrible under Trump. While there has been a relatively orderly process of communication about military movements in Syria, as Russia and the United States sponsor different actors in that civil war, America’s relationship with Russia seems to be at an all-time low since the end of the Cold War. In August 2017, Russia and the United States engaged in mutual expulsion of some diplomatic personnel. And after an apparent poisoning attack in the United Kingdom in 2018, the Trump administration expelled another round of Russian personnel from the United States. Also in 2018, the United States engaged in a four-hour battle in Syria that killed hundreds of Russian mercenaries. Some security experts even worried that the lack of diplomatic communication between the two nuclear powers put the world in danger. In November 2017, Andrew Higgins reported in the New York Times that Putin’s political opponents in Russia were getting tired of “what they see as America’s Russia fever.” Why? Because it reinforces a narrative put forth tirelessly by the state-controlled Russian news media. On television, in newspapers and on websites, Mr. Putin is portrayed as an ever-victorious master strategist who has led Russia — an economic, military and demographic weakling compared with the United States — from triumph to triumph on the world stage. Russian opposition leader Aleksei Navalny called the Democrats’ investigations into Russian interference “not just a disgrace but a collective eclipse of the mind.” Fear-mongering and conspiracy theories have consequences. Trump has occasionally expressed interest in seeing Russia brought back in to make the G-7 into a G-8, but there’s been no substantial improvement in relations. Sanctions still hammer the Russian economy. For years, Democrats tried to brag that they were the reality-based community, the ones who didn’t let partisan or imperial fantasies interfere with their political judgment. But now it’s as if certain news networks and politicians are caught in a feedback loop and think they have been dropped into an episode of Showtime’s Homeland or a revival of 24. There are other countries, such as Ukraine, in which Russian interests do get considered and in which domestic actors have entanglements with business and political interests that favor the Kremlin, or at least a faction within Russia. The parliaments of these countries are rife with accusations of dual loyalties or foreign subornation. These are sad countries in many ways, given an unlucky set of geographic and political conditions. The United States is unlike them in every way. We know that some of these actors know better. Nancy Pelosi, from happy experience, knows that Democrats can win elections by focusing on bread-and-butter issues with their constituents. That’s how she won Democrats a majority in Congress. So the question remains: Why is there this subset of wine-mom Democrats, Morning Joe addicts, and their couriers who prefer to believe this conspiracy theory about Putin? Perhaps madness has its own attractions. Maybe Americans have grown tired of being a world power and instead prefer the exciting low-level conspiracy theories that pass for news in Italy, Greece, or the sites of other has-been empires.

#### 5] Russian asymmetric balancing in space causes multipolarity, shreds global norms, and turns case –

Jackson 18 [Nicole J. Jackson is an international relations and security studies scholar specializing in Russia and the former Soviet Union. She is Associate Professor at the School for International Studies at Simon Fraser University. She has published on Russian foreign and security policy, regional security governance and trafficking in Central Asia. "Outer Space in Russia’s Security Strategy." https://pdfs.semanticscholar.org/40e4/d8ee5c172d547fdc4c047ff01b444b69136e.pdf]

Since 2000 Russia has actively pursued both binding laws and non-binding norms to ban and control weapons in outer space, and has advocated for non-binding, voluntary transparency and confidence building measures (TCBMs). Sometimes it has done this in cooperation with other states, sometimes in opposition to them. This diplomatic endeavour may seem somewhat at odds with Russia’s growing militarisation, however, the dual role on outer space fits well within Russia’s overall foreign and security strategy which is both reactive to US policy and simultaneously positive towards the United Nations (UN) and consensus-based multilateral negotiations. Russia is strengthening its comprehensive power, including military, diplomatic and normative global influence, in order to make its voice heard on the international stage. Russia’s diplomatic activism is that of an aspirational great power, but it also reflects the limits of its current economic and military weaknesses. International negotiations enable Russia to be recognised as a key player in global affairs, while also benefiting from an opportunity to highlight the US/West’s declining influence and the rise of a multipolar world.

This chapter examines why outer space is so important for Russia. Then, it shows how and why the Russian government’s outer space strategy and capabilities have evolved since the 1990s. The paper concludes with an appraisal of Russia’s recent diplomatic initiatives on outer space governance.2 No longer economically competitive in the race for control of outer space, Russia has attempted several strategies to enable it at least to keep in the running. It has placed its space strategy in the context of defence requirements and state military control. It is using diplomacy -- working with international organisations affiliated with the UN - to discuss, cooperate on and influence the race for the militarisation of space. It works with disarmament organisations to influence and promote a collective approach to the problem, rather than one dominated by the richer and more powerful states.

#### 6] No space war – it’s hype and systems are redundant

Johnson-Freese and Hitchens 16 [Dr. Joan Johnson-Freese is a member of the Breaking Defense Board of Contributors, a Professor of National Security Affairs at the Naval War College and author of Space Warfare in the 21st Century: Arming the Heavens. Views expressed are those of the author alone. Theresa Hitchens is a Senior Research Scholar at the Center for International and Security Studies at Maryland (CISSM), and the former Director of the United Nations Institute for Disarmament Research (UNIDIR) in Geneva, Switzerland. Stop The Fearmongering Over War In Space: The Sky’s Not Falling, Part 1. December 27, 2016. https://breakingdefense.com/2016/12/stop-the-fearmongering-over-war-in-space-the-skys-not-falling-part-1/]

In the last two years, we’ve seen rising hysteria over a future war in space. Fanning the flames are not only dire assessments from the US military, but also breathless coverage from a cooperative and credulous press. This reporting doesn’t only muddy public debate over whether we really need expensive systems. It could also become a self-fulfilling prophecy. The irony is that nothing makes the currently slim possibility of war in space more likely than fearmongering over the threat of war in space.

Two television programs in the past two years show how egregious this fearmongering can get. In April 2015, the CBS show 60 Minutes ran a segment called “The Battle Above.” In an interview with General John Hyten, the then-chief of U.S. Air Force Space Command, it came across loud and clear that the United States was being forced to prepare for a battle in space — specifically against China — that it really didn’t want.

It was explained by Hyten and other guests that China is building a considerable amount of hardware and accumulating significant know-how regarding space, all threatening to space assets Americans depend on every day. If viewers weren’t frightened after watching the segment, it wasn’t for lack of trying on the part of CBS.

Using terms like “offensive counterspace” as a 1984 NewSpeak euphemism for “weapons,” it was made clear that the United States had no choice but to spend billions of dollars on offensive counterspace technology to not just thwart the Chinese threat, but control and dominate space. While it didn’t actually distort facts — just omit facts about current U.S. space capabilities — the segment was basically a cost-free commercial for the military-industrial complex.

In retrospect though, “The Battle Above” was pretty good compared to CNN’s recent special, War in Space: The Next Battlefield. The latter might as well have been called Sharknado in Space – because the only far-out weapons technology our potential adversaries don’t have, according to the broadcast, seems to be “sharks with frickin’ laser beams attached to their heads!”

First, CNN needs to hire some fact checkers. Saying “unlike its adversaries, the U.S. has not yet weaponized space” is deeply misleading, like saying “unlike his political opponents, President-Elect Donald Trump has not sprouted wings and flown away”: A few (admittedly alarming) weapons tests aside, no country in the world has yet weaponized space. Contrary to CNN, stock market transactions are not timed nor synchronized through GPS, but a closed system. Cruise missiles can find their targets even without GPS, because they have both GPS and precision inertial measurement units onboard, and IMUs don’t rely on satellite data. Oh, and the British rock group Pink Floyd holds the only claim to the Dark Side of the Moon: There is a “far side” of the Moon — the side always turned away from the Earth — but not a “dark side” — which would be a side always turned away from the Sun.

More nefariously, the segment sensationalized nuggets of truth within a barrage of half-truths, backed by a heavy bass, dramatic soundtrack (and gravelly-voiced reporter Jim Sciutto) and accompanied by sexy and scary visuals.

Make no mistake there are dangers in space, and the United States has the most to lose if space assets are lost. The question is how best to protect them. Here are a few facts CNN omitted.

The Reality

The U.S. has all of the technologies described on the CNN segment and deemed potentially offensive: maneuverable satellites, nano-satellites, lasers, jamming capabilities, robotic arms, ballistic missiles that can be used as anti-satellite weapons, etc. In fact, the United States is more technologically advanced than other countries in both military and commercial space.

That technological superiority scares other countries; just as the U.S. military space community is scared of other countries obtaining those technologies in the future. The U.S. military space budget is more than 10 times greater than that of all the countries in the world combined. That also causes other countries concern.

More unsettling still, the United States has long been leery of treaty-based efforts to constrain a potential arms race in outer space, as supported by nearly every other country in the world for decades. Indeed, under the administration of George W. Bush, the U.S. talking points centered on the mantra “there is no arms race in outer space,” so there is no need for diplomat instruments to constrain one. Now, a decade later, the U.S. military – backed by the Intelligence Community which operates the nation’s spy satellites – seems to be shouting to the rooftops that the United States is in danger of losing the space arms race already begun by its potential adversaries. The underlying assumption — a convenient one for advocates of more military spending — is that now there is nothing that diplomacy can do.

However, it must be remembered that most space-related technologies – with the exception of ballistic missiles and dedicated jammers – have both military and civil/commercial uses; both benign — indeed, helpful — and nefarious uses. For example, giving satellites the ability to maneuver on orbit can allow useful inspections of ailing satellites and possibly even repairs.

Further, the United States is not unable to protect its satellites, as repeated during the CNN broadcast by various interviewees and the host. Many U.S. government-owned satellites, including precious spy satellites, have capabilities to maneuver. Many are hardened against electro-magnetic pulse, sport “shutters” to protect optical “eyes” from solar flares and lasers, and use radio frequency hopping to resist jamming.

Offensive weapons, deployed on the ground to attack satellites, or in space, are not a silver bullet. To the contrary, U.S. deployment of such weapons may actually be detrimental to U.S. and international security in space (as we argued in a recent Atlantic Council publication, Towards a New National Security Space Strategy). Further, there are benefits to efforts started by the Obama Administration to find diplomatic tools to restrain and constrain dangerous military activities in space.

These diplomatic efforts, however, would be undercut by a full-out U.S. pursuit of “space dominance.” This includes dialogue with China, the lack of which Gen. William Shelton, retired commander of Air Force Space Command, lamented in the CNN report.

Given CNN’s “cast,” the spin was not surprising. Starting with Ghost Fleet author Peter Singer set the sensationalist tone, which never altered. The apocalyptic opening, inspired by Ghost Fleet, posited a scenario where all U.S. satellites are taken off-line in nearly one fell swoop. Unless we are talking about an alien invasion, that scenario is nigh on impossible. No potential adversary has such capabilities, nor will they ever likely do so. There is just too much redundancy in the system.

#### 7] Space dominance is key to hegemony

Weichert 17 [(Brandon J., a former Congressional staff member who holds a Master of Arts in Statecraft & National Security Affairs from the Institute of World Politics in Washington, D.C. He is the founder of The Weichert Report: An Online Journal of Geopolitics, and is currently completing a book on national security space policy.) “The High Ground: The Case for U.S. Space Dominance,” Science Direct, 2017. <https://www.sciencedirect.com/science/article/abs/pii/S0030438717300108>] RR

The global order is currently disordered. New states with completely different values from the United States are rising to prominence. Many of those states possess strategic cultures opposed to the American hegemony that has defined the post-Cold War order.

Yet, the United States still maintains greater power, wealth, and capabilities than the other states seeking to displace her. For the United States to maintain its hegemonic position, it must also maintain a dominant position in space. As has been noted before, space is the ultimate high ground from which a state can dominate all of the other strategic domains (land, air, sea, and cyberspace). The United States has enjoyed the benefits from dominating this region. Yet, states like China and Russia are moving forward with their own plans not only to deny America access to space, but also to dominate this realm. These states would then benefit from commanding the high ground of space at America’s expense.

Since at least the Nixon Administration, space has come to be viewed in a militarized light. By the end of the Cold War, space had not only been militarized, but many were searching for a way to weaponize it. Just as the drift toward militarization of space was inexorable, so too is the desire for weaponization. As rival states begin to hone their space skills, the United States should seek to obtain the first move advantage by capitalizing on its already sizable lead in space by weaponizing it first. The placing of weapons in orbit would not only increase the costs of attacking existing U.S. space architecture, but it would also lend itself to increasing global stability by raising the costs of aggressive behavior on belligerents. Whatever negatives the weaponization of space may have, nothing is more negative for America than to find itself losing its dominance of space to a state that has placed weapons in orbit first.

To be passive and allow temporary budgetary constraints to dictate longterm space strategy will damage irrevocably the U.S. position in orbit. Our enemies are aware of our shortsighted preference for space superiority over dominance and are moving toward degrading the American advantage in space.23 Space dominance will not only rebuff rising states from challenging the United States, but it will also lend stability to the world order. This proactive stance was the goal of Ronald Reagan’s Strategic Defense Initiative. It must be the goal of U.S. policymakers today.24

#### 8] Russia is ravenously pursuing global space coop to erode US supremacy, undermine allied resolve, and build support for regional aggression – surrendering pressure causes future conflict and gray zone escalation – the link alone turns case

Listner 18 [Michael J. Listner is an attorney, the founder and principal of the legal and policy think-tank/consultation firm Space Law and Policy Solutions, and the author and editor of the subscription space law and policy briefing-letter, The Précis. 9/17/18, "The art of lawfare and the real war in outer space." <http://www.thespacereview.com/article/3571/1>]

A battle for primacy in outer space took place on August 14, 2018, among the Russian Federation, the United States, and, indirectly, the People’s Republic of China. This battle did not involve the exotic technology of science fiction, antisatellite weapons (ASATs), or the incapacitation of satellites; it was not part of a hot war and did not even occur in outer space. Rather, it took place in the halls of the Conference of Disarmament in Geneva, Switzerland, and concerned the interdiction of the hypothetical deployment of instrumentalities of a hot war in outer space. The carefully orchestrated arena for this battle by the proponents of banning so-called space weapons involved methodologies, institutions, and agents of international law but was undermined by a vigorous counterattack by the United States using the same forum and suite of instruments so skillfully levied against it.1 This battle, of course, is not a single instance but the latest skirmish of a much larger conflict involving real war in space.

There’s been significant attention—and overstatement— about the effect of a proposed Space Force by the United States, including an arms race and dominance as articulated by the United States,2 yet little attention has been given to the contest that continues to be fought over outer space using the tools of international law and policy, both of which are instruments of “lawfare.” Maj. General Charles N. Dunlap, Jr. (retired)3 first defined lawfare in the paper “Law and Military Interventions: Preserving Humanitarian Values in 21st Conflicts,” as “a method of warfare where law is used as a means of realizing a military objective.”4 This definition can be expanded to the use of hard law, soft law, and non-governmental organizations and institutions within the international arena to achieve a national objective and geopolitical end that would otherwise require the use of hard power. As observed by General Dunlap, lawfare imputes the teachings of Sun Tzu in particular this teaching: “The supreme art of war is to subdue the enemy without fighting.”5 Lawfare is not a new concept and has been used in many domains, but the tools brought to bear have become more prolific, and the domain of outer space has been and continues to be a theater where it is applied. The earliest example of lawfare (even though the term was not yet coined) in outer space occurred pre-Sputnik with Soviet Union attempting to use customary law to make claims of sovereignty extending beyond the atmosphere to the space above its territory. This claim was preempted by the launch of Sputnik 1 and the act of the satellite flying over the territory of other nations.6 The Eisenhower Administration saw this as an opportunity to meet a national space policy goal and likewise used customary law as an implement of lawfare and successfully created the principle of free access to outer space, which it utilized for photoreconnaissance activities in lieu of overflights of another nation’s sovereign airspace.7 The Soviet Union unsuccessfully attempted to defeat this move using lawfare in the United Nations through a proposal that would have prohibited the use of outer space for the purpose of intelligence gathering.8 Since that setback, the art of lawfare in outer space has settled on the objective ascribed to another teaching of Sun Tzu:

“With regard to precipitous heights, if you proceed your adversary, occupy the raised and sunny spots, and there wait for him to come up. Remember, if the enemy has occupied precipitous heights before you, do not follow him, but retreat and try to entice him away.”9

The second part of this teaching exemplifies the role of lawfare in the present war in outer space: to employ the tools and institutions of international law as a means to legally corner an adversary and gain geopolitical advantage in soft power, with the aim of slowing and eroding the advantage that adversary has attained through preeminence in the domain of outer space, and replace it with their own. This objective is accomplished by two general means: legally-binding measures, most commonly in the form of treaties, and so-called non-binding measures couched as sustainability.

Lawfare in space continued in the intervening years between Sputnik-1 and the signature and ratification of the Outer Space Treaty and afterward. The weapon of choice: disarmament proposals for outer space. Provisions for banning so-called space weapons in the Outer Space Treaty were rejected by the Soviet Union in favor of separate arms control measures.10 These measures included proposals, some of which related to the proscription of ASATs, designed to not only gain an advantage in outer space but to gauge political intent and resolve.11

The lawfare offensive escalated after the proposed Strategic Defense Initiative with an effort curtail space-based missile defense technology through a ban on so-called space weapons and a proverbial arms race in outer space. The Prevention of an Arms Race in Outer Space (PAROS), introduced in 1985, continues to seek a legally binding measure to place any weapon in outer space, including those designed for self-defense. It spawned measures such as the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT), co-sponsored by Russia and China. This and other measures have met resistance as unverifiable and certainly are not likely to gain the advice and consent of the US Senate for ratification. The end game of the use of lawfare in the form of efforts like PAROS—the latest attempt at which was defeated in Geneva—is to propose legally binding measures that proponents would ignore to their advantage in any event. The sponsors and advocates of these hard-law measures recognize they will not come to fruition but, in the process of promoting them, will enhance their soft power and moral authority, which can be applied to entice their adversary down.

Non-binding resolutions and measures in the form of political agreements and guidelines are being used concurrently in the lawfare engagement in outer space, where proposals for legally binding measures alone fall short of the goal of creating hard law and challenging dominance in outer space. These resolutions and measures, which emphasize sustainability, are designed to perform an end run around the formalities of a treaty to entice agreement on issues that would otherwise be unacceptable in a hard-law agreement. These measures have the dual effect to create soft-power support on the one hand and hard law on the other. This tool of lawfare, which uses clichés of cooperation and sustainability, is a ploy that applies the ambiguous nature of customary international law to achieve what cannot be done through treaties: to “entice the adversary away” and create legal and political constraints to bind and degrade its use of outer space or prevent it from maintaining its superiority, all the while allowing others to play catchup and replace one form of dominance with another. While lawfare is by nature asymmetric, this indirect approach could be considered a subset an irregular tactic of lawfare, as opposed to the use of formal treaties in lawfare.