### REM PIC

#### CP: States, except the United States, should ban the appropriation of outer space for asteroid mining by private entities. The United States should fund the appropriation of outer space for the mining of rare earth metals from asteroids by private entities.

#### The PIC is key to beat China and protect against Chinese REM gatekeeping

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You could be forgiven if you are confused about what’s going on with rare-earth elements. On the one hand, news reports indicate that China may increase production quotas of the minerals this quarter as a [goodwill gesture](https://www.scmp.com/news/china/diplomacy/article/3122501/china-raises-rare-earth-quotas-goodwill-trade-signal-us) to the Joe Biden administration. But other sources say that China may ultimately ban the export of the rare earths altogether on “[security concerns](https://www.bloomberg.com/news/articles/2021-02-19/china-may-ban-rare-earth-technology-exports-on-security-concerns?sref=QYxyklwO).” What’s really going on here?

There are 17 elements considered [rare earths](https://www.bloomberg.com/news/articles/2021-02-16/why-rare-earths-are-achilles-heal-for-europe-u-s-quicktake) — lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium and yttrium — and while many aren’t actually rare in terms of global deposits, extracting them is difficult and expensive. They are used across high-tech manufacturing, including smartphones, fighter aircraft and components in virtually all advanced electronics. Of particular note, they are essential to many of the clean-energy technologies expected to come online in this decade.

I began to focus on rare-earth elements when I commanded the North Atlantic Treaty Organization’s presence in Afghanistan, known as the International Security Assistance Force. While Afghans live in an extremely poor country, [studies](https://thediplomat.com/2020/02/afghanistans-mineral-resources-are-a-lost-opportunity-and-a-threat/) have assessed that they sit atop $1 trillion to $3 trillion in a wide variety of minerals, including rare earths. Some [estimates](https://www.fraserinstitute.org/article/afghanistans-rare-earth-element-bonanza) put the rare-earth levels alone at 1.4 million metric tons.

But every time I tried to visit a mining facility, the answer I got from my security team was, “It’s too dangerous right now, admiral.” Unfortunately, despite a great deal of effort by the U.S. and NATO, those security challenges remain, deterring the large foreign-capital investments necessary to harvest the lodes. Which brings us back to Beijing.

China controls roughly 80% of the rare-earths market, between what it mines itself and processes in raw material from elsewhere. If it decided to wield the weapon of restricting the supply — something it has repeatedly [threatened](https://www.wsj.com/articles/china-trade-fight-raises-specter-of-rare-earth-shortage-11559304000) to do — it would create a significant challenge for manufacturers and a geopolitical predicament for the industrialized world.

It could happen. In 2010, Beijing threatened to cut off exports to Japan over the disputed Senkaku Islands. Two years ago, Beijing was reportedly considering restrictions on exports to the U.S. generally, as well as against specific companies (such as defense giant Lockheed Martin Corp.) that it deemed in violation of its policies against selling advanced weapons to Taiwan.

President Donald Trump’s administration issued an executive order to spur the production of rare earths domestically, and created an [Energy Resource Governance Initiative](https://www.state.gov/wp-content/uploads/2019/06/Energy-Resource-Governance-Initiative-ERGI-Fact-Sheet.pdf) to promote international mining. The European Union and Japan, among others, are also aggressively seeking newer sources of rare earths.

Given this tension, it was superficially surprising that China announced it would boost its mining quotas in the first quarter of 2021 by nearly 30%, reflecting a continuation in strong (and rising) demand. But the increase occurs under a shadow of uncertainty, as the Chinese Communist Party is undertaking a “review” of its policies concerning future sales of rare earths. In all probability, the tactics of the increase are temporary, and fit within a larger strategy.

China will go to great lengths to maintain overall control of the global rare-earths supply. This fits neatly within the geo-economic approach of the [One Belt, One Road](https://www.bloomberg.com/opinion/articles/2019-10-30/china-is-determined-to-reshape-the-globe) initiative, which seeks to use a variety of carrots and sticks — economic, trade, diplomatic and security — to create zones of influence globally. In terms of rare earths, the strategy seems to be allowing carefully calibrated access to the elements at a level that makes it economically less attractive for competitors to undertake costly exploration and mining operations. This is similar to the oil-market strategy used by Russia and the Organization of Petroleum Exporting Countries for decades.

Some free-market advocates believe that China will not take aggressive action choking off supply because that could [precipitate retaliation](https://www.bloomberg.com/opinion/articles/2021-02-22/china-weaponizing-rare-earths-technology-will-probably-backfire) or accelerate the search for alternate sources in global markets. What seems more likely is a series of targeted shutdowns directed against specific entities such as U.S. defense companies, Japanese consumer electronics makers, or European industrial concerns that have offended Beijing.

The path to rare-earth independence for the U.S. must include: Ensuring supply chains of rare earths necessary for national security; promoting the exploitation of the elements domestically (and removing barriers to responsibly doing so); mandating that defense contractors and other critical-infrastructure entities wean themselves off Chinese rare earths; sponsoring research and development to find alternative materials, especially for clean energy technology; and creating a substantial stockpile of the elements in case of a Chinese boycott.

This is a bipartisan agenda. The Trump administration’s [strategic assessment](https://www.commerce.gov/news/press-releases/2019/06/department-commerce-releases-report-critical-minerals) of what needs to be done (which goes beyond just 17 rare earths to include a total of 35 critical minerals) is thoughtful, and should serve as a basis for the Biden administration and Congress.

#### Rare earth elements are critical to the development of technologies that reduce emissions and in the production of US weapons, making them vital to US national security.

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Colonel Charles J. Butler, “Rare Earth Elements: China’s Monopoly and Implications for US National Security,” 2014, https://static1.squarespace.com/static/579fc2ad725e253a86230610/t/57ec77e3be6594808a453ff4/1475114980255/38-1\_Butler1.pdf

The concern over access to a secure and reliable supply of rare earths stems from the ubiquitous nature of the commercial and defense sector products made from these elements. These products range from touch screens for iPhones to guidance components on advanced air-to-air missiles. Without a sufficient supply of rare earths, numerous everyday products would no longer be available to the American consumer. More importantly, essential components in U.S. weapons systems would be diffi- cult if not impossible to produce without them.

Rare earths are important in the manufacture of a myriad of products due to their unique ability to readily give up and accept electrons.20 This property makes them beneficial in many electronic, optical, magnetic, and catalytic applications.21 Permanent magnets and rare earth phosphors are the most prevalent of the rare earths–based products in today’s market.

Permanent magnets incorporate neodymium, praseodymium, dysprosium, and terbium as key elements.22 Rare earth phosphors use yttrium, euro- pium, terbium, gadolinium, and cerium, which contribute to the brilliant display of colors on flat panel television screens.23 Additionally, rare earths also aid in fiber optic signal amplification through the incorporation of yttrium, europium, terbium, and erbium.24 Nickel metal hydride batteries use lanthanum to increase energy storage capacity.25 Finally, catalytic crackers and convertors employ cerium and lanthanum.26

Many rare earth products and technologies possess dual-use attri- butes, meaning they are used for both commercial and military purposes. In the commercial sector, for example, today’s hybrid vehicles employ rare earths permanent magnets in their electric traction drives,27 which either replace or supplement internal combustion engines in hybrid automobiles, increasing energy efficiency.28 Additionally, the Toyota Prius has a nickel metal hydride (Ni-MH) battery for energy storage, which increases overall fuel economy.29 Wind turbines also integrate permanent magnets in gear- less generators for better reliability and online performance.30 The new fluorescent light bulbs on the market utilize rare earth phosphors. These light bulbs consume 70 percent less energy than the older incandescent bulbs.31 Finally, rare earths are found in automobile catalytic convertors to reduce dangerous emissions of CO2 and ozone, contributing to a cleaner environment.32

Furthermore, dual-use components made from rare earths play a vital role in U.S. national security through defense sector applications. Permanent magnets are incorporated in critical guidance and control mech- anisms of U.S.-built weapons, enabling kinetic weapons to impact their target.33 Today’s advanced jet engines are coated with rare earth elements for increased thermal stress resistance.34 The performance requirements for the engines on the F-22A Raptor and F-35 Joint Strike Fighter (JSF) are extremely stringent based on the environment in which these aircraft routinely operate. Without the added thermal protection rare earths provide, engine performance may be degraded with catastrophic results.

Rare earths technology used in electronics also has numerous defense applications. The same technology used in manufacturing commercial Ni-MH batteries is also found in both electronic warfare systems and directed energy weapons.35 Examples of their use include smart jammers on advanced U.S. fighter aircraft, area denial weapons systems, and the electromagnetic railgun.36 All of these weapons require high efficiency battery technology to function properly. Additionally, computer drives manufactured with critical rare earths enable precision weapons systems to reach their targets, while laser technology depends on the amplification properties of rare earths for targeting.37 Without these critical components, accuracy would deteriorate, potentially resulting in increased collateral damage and weapons expenditure.

#### US reliance on China for REMS puts the US at a strategic disadvantage in the case of conflict with China—China can use its rare earth advantage as a weapon against nations that require these metals.

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Colonel Charles J. Butler, “Rare Earth Elements: China’s Monopoly and Implications for US National Security,” 2014, https://static1.squarespace.com/static/579fc2ad725e253a86230610/t/57ec77e3be6594808a453ff4/1475114980255/38-1\_Butler1.pdf

For one nation to possess 95 percent of the production capacity of an increasingly global, vital natural resource is cause for concern. The fact that the nation that controls that resource has not proven to be a trans- parent and accountable global partner with regards to territorial claims and increased military spending raises the level of concern significantly. For these reasons, China’s monopoly of the rare earths industry presents national security and manufacturing concerns for the United States and its partners and allies.

It is difficult to envision the United States or any other nation relying exclusively on a single supplier for its vital resource needs. The United States diversifies its petroleum imports to avoid such a scenario. Even if the United States were able to import all of its petroleum requirements from a single, secure, external source, such as Canada, it would be a dangerous choice due to a number of factors. For instance, contingencies such as labor strikes, souring diplomatic relations, and natural disasters make over- reliance on one source a strategic miscalculation. It is therefore wise for nations to diversify their imports of vital natural resources, using a variety of suppliers and geographic regions if domestic sources are insufficient or unavailable.

As demonstrated in the hypothetical scenario at the beginning of this paper, China’s hold on rare earths may be a decisive factor in a future confrontation with the United States. The numerous weapons systems that rely on rare earths technology place the United States at a strategic disad- vantage with regards to China. If a prolonged, large-scale conflict between the two nations broke out over a Taiwan Strait or South China Sea dispute, the United States may find itself squeezed to obtain sufficient supplies of rare earths to manufacture replacement parts or systems to remain engaged in the fight. Much as the lack of secure access to oil was crippling to the Germans at the end of World War II, rare earths could play a similar, pivotal role in a future conflict with China. In the air-to-air arena alone, the requirement to replace expended stockpiles of advanced air-to-air missiles could become a factor very quickly based on the number of aircraft China would be capable of employing.

Japan recently learned that relying on a single resource supplier was imprudent following an incident between the Japanese Coast Guard and a Chinese fishing trawler near the Senkaku, or Diaoyu Islands.67 In September 2010, a Japanese Coast Guard vessel attempted to stop a Chinese trawler purported to be fishing illegally in Japanese waters. During the incident, the captain of the trawler intentionally rammed the coast guard vessel. Subsequently, the Japanese Coast Guard apprehended the captain. The ensuing political spat boiled over for several weeks with the Japanese threatening to try the captain, while the Chinese suspended high-level contacts with Japan.68 During this period, an unanticipated consequence unfolded. The Chinese were scheduled to deliver several metric tons of rare earths to Japan for use in Japanese commercial industries. In what can only be seen as a direct use of its economic power in a diplomatic tussle, the Chinese withheld shipments of the rare earths during the dispute while awaiting an apology, reparations, and the release of the captain.69 China denied all accusations that it was purposefully withholding the shipments as a polit- ical bargaining tool against Japan.70

Whether China purposefully withheld the shipments or not, the lesson learned by Japan as well as outside observers was that China possesses a powerful economic instrument to employ against nations that depend on Chinese rare earths to sustain their economic livelihood.

#### Primacy and allied commitments solve arms races and great power war – unipolarity is sustainable, and prevents power vacuums and global escalation

Brands 18 [(Hal, Henry Kissinger Distinguished Professor at Johns Hopkins University's School of Advanced International Studies and a senior fellow at the Center for Strategic and Budgetary Assessments) "American Grand Strategy in the Age of Trump," Page 129-133]

Since World War II, the United States has had a military second to none. Since the Cold War, America has committed to having overwhelming military primacy. The idea, as George W. Bush declared in 2002, that America must possess “strengths beyond challenge” has featured in every major U.S. strategy document for a quarter century; it has also been reflected in concrete terms.6

From the early 1990s, for example, the United States consistently accounted for around 35 to 45 percent of world defense spending and maintained peerless global power-projection capabilities.7 Perhaps more important, U.S. primacy was also unrivaled in key overseas strategic regions—Europe, East Asia, the Middle East. From thrashing Saddam Hussein’s million-man Iraqi military during Operation Desert Storm, to deploying—with impunity—two carrier strike groups off Taiwan during the China-Taiwan crisis of 1995– 96, Washington has been able to project military power superior to anything a regional rival could employ even on its own geopolitical doorstep.

This military dominance has constituted the hard-power backbone of an ambitious global strategy. After the Cold War, U.S. policymakers committed to averting a return to the unstable multipolarity of earlier eras, and to perpetuating the more favorable unipolar order. They committed to building on the successes of the postwar era by further advancing liberal political values and an open international economy, and to suppressing international scourges such as rogue states, nuclear proliferation, and catastrophic terrorism. And because they recognized that military force remained the ultima ratio regum, they understood the centrality of military preponderance.

Washington would need the military power necessary to underwrite worldwide alliance commitments. It would have to preserve substantial overmatch versus any potential great-power rival. It must be able to answer the sharpest challenges to the international system, such as Saddam’s invasion of Kuwait in 1990 or jihadist extremism after 9/11. Finally, because prevailing global norms generally reflect hard-power realities, America would need the superiority to assure that its own values remained ascendant. It was impolitic to say that U.S. strategy and the international order required “strengths beyond challenge,” but it was not at all inaccurate.

American primacy, moreover, was eminently affordable. At the height of the Cold War, the United States spent over 12 percent of GDP on defense. Since the mid-1990s, the number has usually been between 3 and 4 percent.8 In a historically favorable international environment, Washington could enjoy primacy—and its geopolitical fruits—on the cheap.

Yet U.S. strategy also heeded, at least until recently, the fact that there was a limit to how cheaply that primacy could be had. The American military did shrink significantly during the 1990s, but U.S. officials understood that if Washington cut back too far, its primacy would erode to a point where it ceased to deliver its geopolitical benefits. Alliances would lose credibility; the stability of key regions would be eroded; rivals would be emboldened; international crises would go unaddressed. American primacy was thus like a reasonably priced insurance policy. It required nontrivial expenditures, but protected against far costlier outcomes.9 Washington paid its insurance premiums for two decades after the Cold War. But more recently American primacy and strategic solvency have been imperiled.

THE DARKENING HORIZON For most of the post–Cold War era, the international system was— by historical standards—remarkably benign. Dangers existed, and as the terrorist attacks of September 11, 2001, demonstrated, they could manifest with horrific effect. But for two decades after the Soviet collapse, the world was characterized by remarkably low levels of great-power competition, high levels of security in key theaters such as Europe and East Asia, and the comparative weakness of those “rogue” actors—Iran, Iraq, North Korea, al-Qaeda—who most aggressively challenged American power. During the 1990s, some observers even spoke of a “strategic pause,” the idea being that the end of the Cold War had afforded the United States a respite from normal levels of geopolitical danger and competition. Now, however, the strategic horizon is darkening, due to four factors.

First, great-power military competition is back. The world’s two leading authoritarian powers—China and Russia—are seeking regional hegemony, contesting global norms such as nonaggression and freedom of navigation, and developing the military punch to underwrite these ambitions. Notwithstanding severe economic and demographic problems, Russia has conducted a major military modernization emphasizing nuclear weapons, high-end conventional capabilities, and rapid-deployment and special operations forces— and utilized many of these capabilities in conflicts in Ukraine and Syria.10 China, meanwhile, has carried out a buildup of historic proportions, with constant-dollar defense outlays rising from US$26 billion in 1995 to US$226 billion in 2016.11 Ominously, these expenditures have funded development of power-projection and antiaccess/area denial (A2/AD) tools necessary to threaten China’s neighbors and complicate U.S. intervention on their behalf. Washington has grown accustomed to having a generational military lead; Russian and Chinese modernization efforts are now creating a far more competitive environment.

### Japan Prolif DA

#### The plan creates a space shock that weakens US-Japanese relations and creates a space race between Beijing and Tokyo.

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Beyond the bilateral difficulties of cooperating with the PRC, it is also important to consider potential ramifications of Sino-US cooperation in space on the Asian political landscape. In particular, cooperation between Washington and Beijing on space issues may well arouse concerns in Tokyo and Delhi. Both of these nations have their own space programs, and while they are arguably not engaged in a “space race” with China (or each other), they are certainly keeping a close eye on developments regarding China.

Of particular importance is Japan. The United States relationship with Japan is arguably its most important in East Asia.

US interest in Japan should be self- evident. Japan hosts 47,000 US troops and is the linchpin for forward US presence in that hemisphere. Japan is the second largest contributor to all major international organizations that buttress US foreign policy.... Japan is the bulwark for US deterrence and engagement of China and North Korea—the reason why those countries cannot assume that the United States will eventually withdraw from the region.

For Japan, whose “peace constitution” forbids it from using war as an instrument of state policy, the United States is an essential guarantor of its security. Any move by the US that might undermine this view raises not only the prospect of weakening US-Japanese ties, but also potentially affecting Japan’s security policies.

In this regard, then, it is essential not to engage in activities that would undercut perceptions of American reliability. Such moves, it should be noted, are not limited to those in the security realm. For example, the Nixon administration undertook several initiatives in the late 1960s and early 1970s that rocked Tokyo-Washington relations, and are still remembered as the “Nixon shocks.” While some of these were in the realm of security (including Nixon’s opening to China and the promulgation of the Nixon Doctrine), the others were in the trade area. These included a ten percent surcharge on all imports entering the US and suspended the convertibility of the dollar (i.e., removed the US from the gold standard).

Part of the “shock” was the fundamental nature of these shifts. Even more damaging, however, was the failure of the Nixon Administration to consult their Japanese counterparts, catching them wholly off-guard. It took several years for the effects of these shocks to wear off. If the United States is intent upon expanding space relations with the PRC, then it would behoove it to consult Japan, in order to minimize the prospect of a “space shock.”

Failing to do so may well incur a Japanese reaction. The decision on the part of Japan to build an explicitly intelligence-focused satellite was in response to the North Korean missile test of 1999, suggesting that Tokyo is fully capable of undertaking space-oriented responses when it is concerned. That, in turn, would potentially arouse the ire of China. The tragic history of Sino-Japanese relations continues to cast a baleful influence upon current interactions between the two states. If there is not a “space race” currently underway between Beijing and Tokyo, it would be most unfortunate if American actions were to precipitate one.

#### Japan’s space program is currently non-offensive, but if Japan doubts that the US will fulfill its security commitments, it will develop offensive strike capabilities.

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Lionel Fatton, “Japan’s Space Program Shifting Away from “Non-Offensive” Purposes?,” July 2020, https://www.ifri.org/sites/default/files/atoms/files/fatton\_japan\_space\_program\_2020.pdf

Japan’s space program has evolved greatly since the end of the Cold War, driven by a rapidly changing geopolitical environment and tailored by the emergence of an “intra-alliance hedging strategy”. Concerns about the United States’ readiness and ability to fulfill its security commitments have led Tokyo to enact security reforms to enhance its value as an ally while moving toward a more autonomous defense posture to prepare for the worst-case scenario of abandonment. This has transformed the Japanese space program from one based on the principle of peaceful use of space to a program aimed at ensuring national security through non-offensive means.

The security track of Japan’s space program currently aims at boosting the combat prowess of the Self-Defense Forces (SDF) in accordance with the non-offensive principle, and at maintaining in all circumstances the ability to use space-based assets for this purpose. Therefore, the country is not militarizing outer space beyond what is necessary to guarantee the proper functioning of the SDF.

Modern warfare puts a premium on intelligence and interoperability between different military elements. Information-gathering and maritime domain awareness devices, positioning services and military communications satellites provide Japan with better understanding of its environment, help anticipate and tackle threats, and allow greater interoperability between the SDF services. And, because national security increasingly depends on space operations, space situational awareness has taken prominence in Japan’s space program as a way to protect space assets against orbital debris and anti-satellite weapons.

Partly due to domestic legal, political and budget constraints, cooperation with international partners remains crucial for Japan to ensure national security and develop key space assets. With both the United States and India, Tokyo is collaborating on positioning services, maritime domain awareness and space situational awareness to help coordinate troop movements among allies, boost sea and ocean monitoring across the Asia- Pacific, and protect space-based assets. Japan has also partnered with European countries to jointly develop space technologies, pursue deep- space exploration, cooperate on positioning services, and set international norms for space activities.

Japan has yet to join the big three in the 21st century military space race. Compared to the United States, China and Russia, Japan is still inhibited by domestic constraints when it comes to military-related affairs, and thus the use of space for security purposes. But, although Japan’s space program is today almost purely non-offensive in nature, the intra-alliance hedging strategy implies a potential weaponization of space, beyond the non-offensive principle. This offensive use of space could materialize through the acquisition of strike capabilities, and the development of Japan’s own anti-satellite weapons or of active defense systems for space assets.

Whether Japan will follow this path depends on a variety of factors. On the domestic side, political stability will be decisive for the swift adaptation of Japan’s space program to its environment. Internationally, the evolution of the United States’ grand strategy and involvement in the Asia-Pacific will be the most influential factor. The more Tokyo doubts Washington’s ability and willingness to fulfill its security commitments, the more intense its intra-alliance hedging strategy becomes, further penetrating and transforming the Japanese space program.

#### Japan will develop offensive strike---nuclear war

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American proponents of Japan obtaining a conventional missile strike capability interviewed for this research argued that the United States could use a more capable ally in the region to address the threat posed by heightened Chinese naval activity. While that prospect might be a tempting short-term fix to offset the U.S. Department of Defense budget cuts over the last decade, the long-term interests of the United States in maintaining regional stability should also be considered. In addition to the negative reactions of Beijing and Seoul, a Japanese offensive strike capability could decrease regional confidence in the credibility of U.S. power in Asia. As noted above, some experts argue that if Japan strengthens its offensive capability, such a move might be interpreted by neighbors reliant on the U.S. nuclear umbrella as a sign that Tokyo is losing confidence in the United States’ credibility.71 This could start a chain reaction that causes more U.S. allies to hedge with China or to develop their own strike capabilities, further increasing instability in Asia. *China*. China would likely be the most vocal in its disapproval of a Japanese conventional missile strike capability, potentially offering not just harsh words but also harsh actions that could further decrease regional stability in an already tense security environment. China expressed dissent when Japan considered a preemptive strike option against the North Korean threat in 2006, arguing that the move was “extremely irresponsible” and would severely interfere with international diplomatic efforts, aggravating tensions in Northeast Asia.72 Over ten years later, the regional environment is even more tense as a result of North Korea’s acquisition of nuclear weapons and China’s island reclamation efforts in the East and South China Seas. Support from Washington for Tokyo’s armament would likely fuel Beijing’s narrative that an aggressive and hegemonic United States is fixated on containing China and would be used to justify China’s own increased militarization. It would likely also end any chance of dialogue between Washington and Beijing on facilitating peaceful resolutions to regional territorial disputes. Brad Roberts points out that adopting strike capability would assist Japan in cases where its interests do not align with those of the United States, as in potential gray-zone conflicts. 73 However, the ensuing heightened mistrust between the alliance partners and China may work to increase the likelihood of a gray-zone conflict—such as the 2010 collision of Japanese and Chinese boats in disputed territory—possibly escalating into war. In addition, if Japan had a conventional missile strike capability that could be used to “preempt” a perceived imminent attack from China, Beijing would in turn be more likely to consider preemption of Japanese strike abilities, causing a premature escalation of the crisis that would undoubtedly draw in the United States. *South Korea*. Despite significant progress on U.S.-ROK-Japan trilateral security cooperation in recent years, Japan-ROK military relations remain increasingly tense, a situation that could easily spiral out of control if Japan adopted an offensive capability.74 When Japan, sparked by North Korea’s provocations in 2006, publicly debated the legality of a “preemptive strike” option, South Korean officials bluntly expressed their negative opinion of Japan’s intentions. A spokesperson for the Blue House secretariat, for example, remarked, “We have been alerted by this display of Japan’s inclination to aggression,” and that Japan was using the crisis “as an excuse to beef up their military.”75 South Koreans demonstrated a similar sentiment after Tokyo’s 2014 CSD proposal, with a 2015 poll showing that the majority of the public (56.9%) perceived Japan as “militaristic,” up 3.8 percentage points from the previous year.76 If Tokyo were to push forward with the discussion of adopting a conventional missile strike capability, South Korean public opinion would likely become even more unfavorable toward Japan. At a time when enhanced trilateral cooperation is important to deter the evolving threats in the region, Japan advancing legislation to allow for conventional missile strike capabilities would likely derail those efforts, especially if labeled “preemptive.” Such a move could even push Seoul to hedge with Beijing, as the ROK is increasingly reluctant to join any initiative perceived to be aimed at containing China.77 With China as South Korea’s largest trading partner and the United States as its greatest security ally, the ROK is not eager to choose between the two sides. *Southeast Asia*. Countries in Southeast Asia are watching the Trump administration closely to see where Washington will draw the line on China’s military rise and growing regional assertiveness, and many are already hedging accordingly. For example, countries such as Vietnam and the Philippines are increasing their own conventional arsenal and naval capabilities as a result of Washington’s “slow erosion of credibility” in the region during the Obama administration.78 Defense of Japan 2018 seems to have confidence in the Trump administration’s commitment to maintaining a powerful presence in Asia.79 However, as discussed earlier, if Japan were to pursue an offensive defense strategy, the Southeast Asian countries could see this as a sign of Tokyo’s loss of faith in the United States’ willingness to uphold its defense commitments. China’s seizure of the Scarborough Shoal from the Philippines in 2012 has already eroded these countries’ confidence in the U.S. security guarantee to some extent.80 Declining credibility and corresponding hedging—through either growing armament or alignment with China—could not only further increase tensions and heighten the risk of a gray-zone escalation but also lead to greater Chinese military assertiveness and dominance in the region. *Summary* Despite the seemingly unbalanced nature of the U.S.-Japan alliance, the argument for “balancing” the alliance with Japan’s development of an independent conventional missile strike capability does not take into account important repercussions that could undermine both regional stability and U.S. credibility. In addition, updated Japanese defense guidelines, such as CSD, already give Japan a “greater role” in global security. Unless future U.S. administrations drastically reduce the U.S. military presence in Asia, the benefit of a more equal alliance would not outweigh the potential costs of Japan’s adoption of a conventional missile strike capability. CONCLUSION The arguments supporting Japan’s acquisition of a conventional missile strike capability do not hold weight in the current regional, economic, and alliance environments. The development of such a capability is not a practical solution for Japan to abate the threat from the DPRK, and the move could be perceived by China and South Korea as facilitating a U.S. strategy of containment. Traditional restrictions on the Japanese defense budget would not practically allow the buildup of the military capabilities required for a conventional missile strike force, a restriction that cannot be changed without support from a military-wary public. At first glance, a “normal” Japan that is capable of contributing to U.S. deterrence efforts might seem appealing from an alliance perspective, especially after the 2010 U.S. defense budget cuts, and an increasingly threatening regional security environment. Yet, though the U.S.-Japan alliance may be unbalanced in terms of capabilities, the United States has broader interests in regional stability that will be better promoted if Japan maintains a purely defensive force. A strike-capable Japan might not only escalate an already tense regional standoff with China but also elicit a harsh response from other countries against Tokyo and Washington. It could also erode the credibility of the U.S. nuclear umbrella, potentially leading to increased militarization throughout Asia. If the environment surrounding any of these three arguments changes—for example, if the United States’ actions discredit its reliability to protect Japan under the alliance, if Japanese public support allows an increase in the JSDF’s budget, or if the United States can no longer maintain a credible military deterrence in Asia—Japan would have a strong argument to move forward with conventional missile strike capabilities. In that case, both parties should exercise prudence in their public communications of planned alliance cooperation on the matter and about how or why the alliance would choose to employ such abilities. Hawkish suggestions of the potential to increase U.S. dominance in the region should be avoided.81 China is rightfully wary of any reference to conventional prompt global strike. Such rhetoric coming from Japan or the United States combined with the decision to move forward on conventional missile strike capabilities could be considered a threatening signal by Beijing.82 Without calculated prudence in regional dialogues, even the discussion of Tokyo acquiring conventional missile strike capabilities could ultimately worsen the regional security environment rather than improve it.

### Innovation DA

#### Space Commercialization drives Tech Innovation in the Status Quo – it provides a unique impetus.

Hampson 17 Joshua Hampson 1-25-2017 “The Future of Space Commercialization” <https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf> (Security Studies Fellow at the Niskanen Center)//Elmer

The size of the space economy is far larger than many may think. In 2015 alone, the global market amounted to $323 billion. Commercial infrastructure and systems accounted for 76 percent of that 9 total, with satellite television the largest subsection at $95 billion. The global space launch market’s 10 11 share of that total came in at $6 billion dollars. It can be hard to disaggregate how space benefits 12 particular national economies, but in 2009 (the last available report), the Federal Aviation Administration (FAA) estimated that commercial space transportation and enabled industries generated $208.3 billion in economic activity in the United States alone. Space is not just about 13 satellite television and global transportation; while not commercial, GPS satellites also underpin personal navigation, such as smartphone GPS use, and timing data used for Internet coordination.14 Without that data, there could be problems for a range of Internet and cloud-based services.15 There is also room for growth. The FAA has noted that while the commercial launch sector has not grown dramatically in the last decade, there are indications that there is latent demand. This 16 demand may catalyze an increase in launches and growth of the wider space economy in the next decade. The Satellite Industry Association’s 2015 report highlighted that their section of the space economy outgrew both the American and global economies. The FAA anticipates that growth to 17 continue, with expectations that small payload launch will be a particular industry driver.18 In the future, emerging space industries may contribute even more the American economy. Space tourism and resource recovery—e.g., mining on planets, moons , and asteroids—in particular may become large parts of that industry. Of course, their viability rests on a range of factors, including costs, future regulation, international problems, and assumptions about technological development. However, there is increasing optimism in these areas of economic production. But the space economy is not just about what happens in orbit, or how that alters life on the ground. The growth of this economy can also contribute to new innovations across all walks of life. Technological Innovation 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.

#### Strong Innovation solves Extinction.

Matthews 18 Dylan Matthews 10-26-2018 “How to help people millions of years from now” <https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good> (Co-founder of Vox, citing Nick Beckstead @ Rutgers University)//Re-cut by Elmer

If you care about improving human lives, you should overwhelmingly care about those quadrillions of lives rather than the comparatively small number of people alive today. The 7.6 billion people now living, after all, amount to less than 0.003 percent of the population that will live in the future. It’s reasonable to suggest that those quadrillions of future people have, accordingly, hundreds of thousands of times more moral weight than those of us living here today do. That’s the basic argument behind Nick Beckstead’s 2013 Rutgers philosophy dissertation, “On the overwhelming importance of shaping the far future.” It’s a glorious mindfuck of a thesis, not least because Beckstead shows very convincingly that this is a conclusion any plausible moral view would reach. It’s not just something that weird utilitarians have to deal with. And Beckstead, to his considerable credit, walks the walk on this. He works at the Open Philanthropy Project on grants relating to the far future and runs a charitable fund for donors who want to prioritize the far future. And arguments from him and others have turned “long-termism” into a very vibrant, important strand of the effective altruism community. But what does prioritizing the far future even mean? The most literal thing it could mean is preventing human extinction, to ensure that the species persists as long as possible. For the long-term-focused effective altruists I know, that typically means identifying concrete threats to humanity’s continued existence — like unfriendly artificial intelligence, or a pandemic, or global warming/out of control geoengineering — and engaging in activities to prevent that specific eventuality. But in a set of slides he made in 2013, Beckstead makes a compelling case that while that’s certainly part of what caring about the far future entails, approaches that address specific threats to humanity (which he calls “targeted” approaches to the far future) have to complement “broad” approaches, where instead of trying to predict what’s going to kill us all, you just generally try to keep civilization running as best it can, so that it is, as a whole, well-equipped to deal with potential extinction events in the future, not just in 2030 or 2040 but in 3500 or 95000 or even 37 million. In other words, caring about the far future doesn’t mean just paying attention to low-probability risks of total annihilation; it also means acting on pressing needs now. For example: We’re going to be better prepared to prevent extinction from AI or a supervirus or global warming if society as a whole makes a lot of scientific progress. And a significant bottleneck there is that the vast majority of humanity doesn’t get high-enough-quality education to engage in scientific research, if they want to, which reduces the **odds that we have enough trained scientists to come up with the breakthroughs** we need as a civilization to survive and thrive. So maybe one of the best things we can do for the far future is to improve school systems — here and now — to harness the group economist Raj Chetty calls “lost Einsteins” (potential innovators who are thwarted by poverty and inequality in rich countries) and, more importantly, the hundreds of millions of kids in developing countries dealing with even worse education systems than those in depressed communities in the rich world. What if living ethically for the far future means living ethically now? Beckstead mentions some other broad, or very broad, ideas (these are all his descriptions): Help make computers faster so that people everywhere can work more efficiently Change intellectual property law so that technological innovation can happen more quickly Advocate for open borders so that people from poorly governed countries can move to better-governed countries and be more productive Meta-research: improve incentives and norms in academic work to better advance human knowledge Improve education Advocate for political party X to make future people have values more like political party X ”If you look at these areas (economic growth and technological progress, access to information, individual capability, social coordination, motives) a lot of everyday good works contribute,” Beckstead writes. “An implication of this is that a lot of everyday good works are good from a broad perspective, even though hardly anyone thinks explicitly in terms of far future standards.” Look at those examples again: It’s just a list of what normal altruistically motivated people, not effective altruism folks, generally do. Charities in the US love talking about the lost opportunities for innovation that poverty creates. Lots of smart people who want to make a difference become scientists, or try to work as teachers or on improving education policy, and lord knows there are plenty of people who become political party operatives out of a conviction that the moral consequences of the party’s platform are good. All of which is to say: Maybe effective altruists aren’t that special, or at least maybe we don’t have access to that many specific and weird conclusions about how best to help the world. If the far future is what matters, and generally trying to make the world work better is among the best ways to help the far future, then effective altruism just becomes plain ol’ do-goodery.

### Framing

#### Extinction outweighs—

1. **Moral uncertainty means preventing extinction should be our highest priority.  
   Bostrom 12** [Nick Bostrom. Faculty of Philosophy & Oxford Martin School University of Oxford. “Existential Risk Prevention as Global Priority.” Global Policy (2012)]  
   These reflections on **moral uncertainty suggest** an alternative, complementary way of looking at existential risk; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ **Our present understanding of axiology might** well **be confused. We may not** nowknow — at least not in concrete detail — what outcomes would count as a big win for humanity; we might not even yet **be able to imagine the best ends** of our journey. **If we are** indeedprofoundly **uncertain** about our ultimate aims,then we should recognize that **there is a great** option **value in preserving** — and ideally improving — **our ability to recognize value and** to **steer the future accordingly. Ensuring** that **there will be a future** version of **humanity** with great powers and a propensity to use them wisely **is** plausibly **the best way** available to us **to increase the probability that the future will contain** a lot of **value.** To do this, we must prevent any existential catastrophe.

#### Extinction is the only impact that’s irreversible—forecloses any possibility of improvement in the future and subjects everyone to suffering

#### We have an ethical responsibility to future generations to save as many lives as possible