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#### Text: The appropriation of space by private entities is unjust, except for companies incorporated in the People’s Republic of China.

#### Private Chinese space companies are set to outpace America in the squo.

Autry and Kwast 18

Greg Autry, professor of space leadership, policy, and business @ ASU, served on the 2016 NASA transition team Steve Kwast, Lieutenant General and commander for the Air Force, fellow in public policy @ Harvard, 12-8-2018, "America Is Losing the Second Space Race to China," Foreign Policy, <https://foreignpolicy.com/2019/08/22/america-is-losing-the-second-space-race-to-china/> //MLT

China’s aggressive investment in space solar power will allow it to provide cheap, clean power to the world, displacing U.S. energy firms while placing a second yoke around the developing world. Significantly, such orbital power stations have dual use potential and, if properly designed, could serve as powerful offensive weapons platforms. China’s first step in this process is to conquer the growing small space launch market. Beijing is providing nominally commercial firms with government-manufactured, mobile intercontinental ballistic missiles they can use to dump launch services on the market below cost. These start-ups are already undercutting U.S. pricing by 80 percent. Based on its previous success in using dumping to take out U.S. developed industries such as solar power modules and drones, China will quickly move upstream to attack the leading U.S. launch providers and secure a global commercial monopoly. Owning the launch market will give them an unsurmountable advantage against U.S. competitors in satellite internet, imaging, and power.

#### Chinese space dominance is k2 global hegemony.

Jaewoo 21

Jaewoo Choo, professor of international politics @ Kyung Hee U, director of China Research Center, 3-11-2021, "The United States and China: Competition for superiority in space to protect resources and weapon systems," OpenAsia | Thoughts and Ideas about Asia, <https://www.openasia.asia/the-united-states-and-china-competition-for-superiority-in-space-to-protect-resources-and-weapon-systems/> //MLT

Whoever rules space rules the future There is one reason why the two countries' space strategy competition will inevitably lead to a hegemony competition. This is because they try to conquer the space order. Conquering the space order is to define and establish the space order. Those who dominate space will dominate almost all sectors of the future world, including economy, technology, environment, cyberspace, transportation and energy. That's why the United States is considered as a hegemonic country on Earth today. The U.S. is recognized as a hegemonic country because it establishes and leads the economic, financial, trade, political, and diplomatic order. There are two areas in the world today where international order has not been established. One is virtual space, which is the cyber world. The other is the space. Since the international order of these two areas is closely correlated with each other, it is likely that the establishment of the order in these two areas will be pursued simultaneously. This means that cyber order cannot be discussed without discussing satellite issues. The Communist Party of China recognized this early on. At the 19th National Communist Party Congress in 2017, it expressed its justification for establishing space order. President Xi Jinping declared that China's diplomatic stage in the 21st century has expanded beyond the Earth into space and virtual space. It was the moment when China defined the concept of diplomatic space as the "universe" beyond the Earth. He then explained that the establishment of a system that can even manage the order of the universe and the virtual world eventually means the establishment of practical governance. Therefore, he justified that China's diplomatic horizon has no choice but to expand into space. Furthermore, he stressed that he is confident that the ideation of building such governance serves as the foundation for the community of common destiny for mankind which China pursues. In other words, he publicly urged China to have the capabilities and means to become a key country in building governance in these two areas.

**Chinese leadership solves extinction.**

Shen **Yamei 18**, Deputy Director and Associate Research Fellow of Department for American Studies, China Institute of International Studies, 1-9-2018, "Probing into the “Chinese Solution” for the Transformation of Global Governance," CAIFC, http://www.caifc.org.cn/en/content.aspx?id=4491

As the world is in a period of great development, transformation and adjustment, the international power comparison is undergoing profound changes, global governance is reshuffling and traditional governance concepts and models are confronted with challenges. The international community is expecting China to play a bigger role in global governance, which has given birth to the Chinese solution. A. To Lead the Transformation of the Global Governance System. **The “shortcomings” of the existing global governance system are prominent, which can hardly ensure global development. First, the traditional dominant forces are seriously imbalanced**. The US and Europe that used to dominate the global governance system have been beset with structural problems, with their economic development stalling, social contradictions intensifying, populism and secessionism rising, and states trapped in internal strife and differentiation. These countries have not fully reformed and adjusted themselves well, but rather pointed their fingers at globalization and resorted to retreat for self-insurance or were busy with their own affairs without any wish or ability to participate in global governance, which has encouraged the growth of “anti-globalization” trend into an interference factor to global governance. Second, the global governance mechanism is relatively lagging behind. Over the years of development, the strength of emerging economies has increased dramatically, which has substantially upset the international power structure, as the developing countries as a whole have made 80 percent of the contributions to global economic growth. These countries have expressed their appeal for new governance and begun policy coordination among themselves, which has initiated the transition of global governance form “Western governance” to “East-West joint governance”, but **the traditional governance mechanisms such as the World Bank, IMF and G7 failed to reflect the demand of the new pattern, in addition to their lack of representation and inclusiveness.** Third, the global governance rules are developing in a fragmented way, with governance deficits existing in some key areas. With the diversification and in-depth integration of international interests, the domain of global governance has continued to expand, with actors multiplying by folds and action intentions becoming complicated. As relevant efforts are usually temporary and limited to specific partners or issues, global governance driven by requests of “diversified governance” lacks systematic and comprehensive solutions. Since the beginning of this year, there have been risks of running into an acephalous state **in such key areas as global economic governance and climate change**. **Such emerging issues as nuclear security and international terrorism have suffered injustice because of power politics**. **The governance areas in deficit, such as cyber security, polar region and oceans, have “reversely forced” certain countries and organizations to respond hastily**. All of these have made the global governance system trapped in a dilemma and call urgently for a clear direction of advancement. B. To Innovate and Perfect the International Order. Currently, whether the developing countries or the Western countries of Europe and the US are greatly discontent with the existing international order as well as their appeals and motivation for changing the order are unprecedentedly strong. The US is the major creator and beneficiary of the existing hegemonic order, but it is now doubtful that it has gained much less than lost from the existing order, faced with the difficulties of global economic transformation and obsessed with economic despair and political dejection. Although the developing countries as represented by China acknowledge the positive role played by the post-war international order in safeguarding peace, boosting prosperity and promoting globalization, they criticize the existing order for lack of inclusiveness in politics and equality in economy, as well as double standard in security, believing it has failed to reflect the multi-polarization trend of the world and is an exclusive “circle club”. Therefore, there is much room for improvement. For China, to lead the transformation of the global governance system and international order not only supports the efforts of the developing countries to uphold multilateralism rather than unilateralism, advocate the rule of law rather than the law of the jungle and practice democracy rather than power politics in international relations, but also is an important subject concerning whether China could gain the discourse power and development space corresponding to its own strength and interests in the process of innovating and perfecting the framework of international order. C. To Promote Integration of the Eastern and Western Civilizations. Dialog among civilizations, which is the popular foundation for any country’s diplomatic proposals, runs like a trickle moistening things silently. Nevertheless, in the existing international system guided by the “Western-Centrism”, the Western civilization has always had the self-righteous superiority, conflicting with the interests and mentality of other countries and having failed to find the path to co-existing peacefully and harmoniously with other civilizations. **So to speak, many problems of today, including the growing gap in economic development between the developed and developing countries against the background of globalization, the Middle East trapped in chaos and disorder, the failure of Russia and Turkey to “integrate into the West”, etc., can be directly attributed to lack of exchanges, communication and integration among civilizations.** Since the 18th National Congress of CPC, Xi Jinping has raised the concept of “Chinese Dream” that reflects both Chinese values and China’s pursuit, re-introducing to the world the idea of “all living creatures grow together without harming one another and ways run parallel without interfering with one another”, which is the highest ideal in Chinese traditional culture, and striving to shape China into a force that counter-balance the Western civilization. He has also made solemn commitment that “we respect the diversity of civilizations …… cannot be puffed up with pride and depreciate other civilizations and nations”; “facing the people deeply trapped in misery and wars, we should have not only compassion and sympathy, but also responsibility and action …… do whatever we can to extend assistance to those people caught in predicament”, etc. China will rebalance the international pattern from a more inclusive civilization perspective and with more far-sighted strategic mindset, or at least correct the bisected or predominated world order so as to promote the parallel development of the Eastern and Western civilizations through mutual learning, integration and encouragement. D. To Pass on China’s Confidence. Only a short while ago, some Western countries had called for “China’s responsibility” and made it an inhibition to “regulate” China’s development orientation. Today, China has become a source of stability in an international situation full of uncertainties. Over the past 5 years, China has made outstanding contributions to the recovery of world economy under relatively great pressure of its own economic downturn. Encouraged by the “four confidences”, the whole of the Chinese society has burst out innovation vitality and produced innovation achievements, making people have more sense of gain and more optimistic about the national development prospect. It is the heroism of the ordinary Chinese to overcome difficulties and realize the ideal destiny that best explains China’s confidence. When this confidence is passed on in the field of diplomacy, it is expressed as: first, China’s posture is seen as more forging ahead and courageous to undertake responsibilities ---- proactively shaping the international agendas rather than passively accepting them; having clear-cut attitudes on international disputes rather than being equivocal; and extending international cooperation to comprehensive and dimensional development rather than based on the theory of “economy only”. In sum, China will actively seek understanding and support from other countries rather than imposing its will on others with clear-cut Chinese characteristics, Chinese style and Chinese manner. Second, China’s discourse is featured as a combination of inflexibility and yielding as well as magnanimous ---- combining the internationally recognized diplomatic principles with the excellent Chinese cultural traditions through digesting the Chinese and foreign humanistic classics assisted with philosophical speculations to make “China Brand, Chinese Voice and China’s Image get more and more recognized”. Third, the Chinese solution is more practical and intimate to people as well as emphasizes inclusive cooperation, as China is full of confidence to break the monopoly of the Western model on global development, “offering mankind a Chinese solution to explore a better social system”, and “providing a brand new option for the nations and peoples who are hoping both to speed up development and maintain independence”. II.Path Searching of the “Chinese Solution” for Global Governance Over the past years’ efforts, China has the ability to transform itself from “grasping the opportunity” for development to “creating opportunity” and “sharing opportunity” for common development, hoping to pass on the longing of the Chinese people for a better life to the people of other countries and promoting the development of the global governance system toward a more just and rational end. It has become the major power’s conscious commitment of China to lead the transformation of the global governance system in a profound way. A. To Construct the Theoretical System for Global Governance. The theoretical system of global governance has been the focus of the party central committee’s diplomatic theory innovation since the 18th National Congress of CPC as well as an important component of the theory of socialism with Chinese characteristics for a new era, which is not only the sublimation of China’s interaction with the world from “absorbing and learning” to “cooperation and mutual learning”, but also the cause why so many developing countries have turned from “learning from the West” to “exploring for treasures in the East”. In the past 5 years, the party central committee, based on precise interpretation of the world pattern today and serious reflection on the future development of mankind, has made a sincere call to the world for promoting the development of global governance system toward a more just and rational end, and proposed a series of new concepts and new strategies including engaging in major power diplomacy with Chinese characteristics, creating the human community with common destiny, promoting the construction of new international relationship rooted in the principle of cooperation and win-win, enriching the strategic thinking of peaceful development, sticking to the correct benefit view, formulating the partnership network the world over, advancing the global economic governance in a way of mutual consultation, joint construction and co-sharing, advocating the joint, comprehensive, cooperative and sustainable security concept, and launching the grand “Belt and Road” initiative. The Chinese solution composed of these contents, not only fundamentally different from the old roads of industrial revolution and colonial expansion in history, but also different from the market-driven neo-liberalism model currently advocated by Western countries and international organizations, stands at the height of the world and even mankind, seeking for global common development and having widened the road for the developing countries to modernization, which is widely welcomed by the international community. B. To Supplement and Perfect the Global Governance System. Currently, the international political practice in global governance is mostly problem-driven without creating a set of relatively independent, centralized and integral power structures, resulting in the existing global governance systemcharacterized as both extensive and unbalanced. China has been engaged in reform and innovation, while maintaining and constructing the existing systems, producing some thinking and method with Chinese characteristics. First, China sees the UN as a mirror that reflects the status quo of global governance, which should act as the leader of global governance, and actively safeguards the global governance system with the UN at the core. Second, China is actively promoting the transforming process of such recently emerged international mechanisms as G20, BRICS and SCO, perfecting them through practice, and boosting Asia-Pacific regional cooperation and the development of economic globalization. China is also promoting the construction of regional security mechanism through the Six-Party Talks on Korean Peninsula nuclear issue, Boao Forum for Asia, CICA and multilateral security dialog mechanisms led by ASEAN so as to lay the foundation for the future regional security framework. Third, China has initiated the establishment of AIIB and the New Development Bank of BRICS, creating a precedent for developing countries to set up multilateral financial institutions. The core of the new relationship between China and them lies in “boosting rather than controlling” and “public rather than private”, which is much different from the management and operation model of the World Bank, manifesting the increasing global governance ability of China and the developing countries as well as exerting pressure on the international economic and financial institution to speed up reforms. **Thus, in leading the transformation of the global governance system, China has not overthrown the existing systems and started all over again, but been engaged in innovating and perfecting; China has proactively undertaken international responsibilities, but has to do everything in its power and act according to its ability.** C. To Reform the Global Governance Rules. Many of the problems facing global governance today are deeply rooted in such a cause that the dominant power of the existing governance system has taken it as the tool to realize its own national interests first and a platform to pursue its political goals. Since the beginning of this year, the US has for several times requested the World Bank, IMF and G20 to make efforts to mitigate the so-called global imbalance, abandoned its commitment to support trade openness, cut down investment projects to the middle-income countries, and deleted commitment to support the efforts to deal with climate change financially, which has made the international systems accessories of the US domestic economic agendas, dealing a heavy blow to the global governance system. On the contrary, the interests and agendas of China, as a major power of the world, are open to the whole world, and China in the future “will provide the world with broader market, more sufficient capital, more abundant goods and more precious opportunities for cooperation”, while having the ability to make the world listen to its voice more attentively. With regard to the subject of global governance, China has advocated that what global governance system is better cannot be decided upon by any single country, as the destiny of the world should be in the hands of the people of all countries. In principle, all the parties should stick to the principle of mutual consultation, joint construction and co-sharing, resolve disputes through dialog and differences through consultation. Regarding the critical areas, opening to the outer world does not mean building one’s own backyard, but building the spring garden for co-sharing; the “Belt and Road” initiative is not China’s solo, but a chorus participated in by all countries concerned. **China has also proposed international public security views on nuclear security, maritime cooperation and cyber space order, calling for efforts to make the global village into a “grand stage for seeking common development” rather than a “wrestling arena”; we cannot “set up a stage here, while pulling away a prop there”, but “complement each other to put on a grand show”**. From the orientation of reforms, efforts should be made to better safeguard and expand the legitimate interests of the developing countries and increase the influence of the emerging economies on global governance. Over the past 5 years, China has attached importance to full court diplomacy, gradually coming to the center stage of international politics and proactively establishing principles for global governance. By hosting such important events as IAELM, CICA Summit, G20 Summit, the Belt and Road International Cooperation Forum and BRICS Summit, China has used theseplatforms to elaborate the Asia-Pacific Dream for the first time to the world, expressing China’s views on Asian security and global economic governance, discussing with the countries concerned with the Belt and Road about the synergy of their future development strategies and setting off the “BRICS plus” capacity expansion mechanism, in which China not only contributes its solution and shows its style, but also participates in the shaping of international principles through practice. On promoting the resolution of hot international issues, China abides by the norms governing international relations based on the purposes and principles of the UN Charter, and insists on justice, playing a constructive role as a responsible major power in actively promoting the political accommodation in Afghanistan, mediating the Djibouti-Eritrea dispute, promoting peace talks in the Middle East, devoting itself to the peaceful resolution of the South China Sea dispute through negotiations. In addition, China’s responsibility and quick response to international crises have gained widespread praises, as seen in such cases as assisting Africa in its fight against the Ebola epidemic, sending emergency fresh water to the capital of Maldives and buying rice from Cambodia to help relieve its financial squeeze, which has shown the simple feelings of the Chinese people to share the same breath and fate with the people of other countries. D. To Support the Increase of the Developing Countries’ Voice. The developing countries, especially the emerging powers, are not only the important participants of the globalization process, but also the important direction to which the international power system is transferring. With the accelerating shift of global economic center to emerging markets and developing economies, the will and ability of the developing countries to participate in global governance have been correspondingly strengthened. As the biggest developing country and fast growing major power, China has the same appeal and proposal for governance as other developing countries and already began policy coordination with them, as China should comply with historical tide and continue to support the increase of the developing countries’ voice in the global governance system. To this end, China has pursued the policy of “dialog but not confrontation, partnership but not alliance”, attaching importance to the construction of new type of major power relationship and global partnership network, while making a series proposals in the practice of global governance that could represent the legitimate interests of the developing countries and be conducive to safeguarding global justice, including supporting an open, inclusive, universal, balanced and win-win economic globalization; promoting the reforms on share and voting mechanism of IMF to increase the voting rights and representation of the emerging market economies; financing the infrastructure construction and industrial upgrading of other developing countries through various bilateral or regional funds; and helping other developing countries to respond to such challenges as famine, refugees, climate change and public hygiene by debt forgiveness and assistance.

**We should embrace Chinese soft power- it’s based on principles of self-determination and cooperation that will reduce war and improve global living conditions.**

**Li, PhD, ‘18**

(Eric X., PoliSci@FudanUniversity, CouncilMember@InternationalInstituteStrategicStudies, <https://foreignpolicy.com/2018/08/20/the-rise-and-fall-of-soft-power/>, August 20) BW

It is possible to aspire to something better this time. And this is where China may come in. In Nye’s original soft power article, China rarely came up. And when it did, it was either lumped in with the Soviet Union or brushed off as a country lacking any ability, hard or soft, to challenge Western dominance. Thirty years later, Nye’s omission seems strange. In the era of soft power, China was the only major country that bucked the trend. It integrated itself into the post-World War II international order by expanding deep and broad cultural and economic ties with virtually all countries in the world. It is now the largest trading nation in the world and in history. But it steadfastly refused to become a customer of Western soft power. It engineered its own highly complex transition from a centrally planned economy to a market economy, yet it refused to allow the market to rise above the state. It rejected Western definitions of democracy, freedom, and human rights, and it retained and strengthened its one-party political system. In soft power terms, China did not agree to want what the West wanted—culturally, ideologically, or institutionally. The result? Contrary to most of the countries that went through the great conversion, China succeeded at a speed and scale unprecedented in human history. The country turned from a poor agrarian backwater into the largest industrial economy in the world by purchasing power parity. In the process of doing so, **it lifted 700 million people out of poverty.** Harvard University’s Graham Allison calls this miracle the “pyramid of poverty.” Forty years ago, nine out 10 Chinese lived under the “extreme poverty line” set by the World Bank. Today, the pyramid has been flipped, with only around 10 percent of Chinese living under that line. Without that reversal, global poverty would likely have increased rather than decreased over the last several decades. Such achievements could be the content of a **new kind of soft power.** Nearly two decades ago, Chinese grand strategist Zheng Bijian coined the term **“peaceful rise”** to articulate China’s aspirations for itself. Over the years, the notion of peaceful rise has encountered much suspicion. Critics, for example, point to tensions in the South China Sea to show that China’s intentions are not, in fact, peaceful. And Allison has warned that, whatever their intentions, the United States and China could still fall into a Thucydides trap, in which the strength of a rising power (China) strikes fear in the incumbent power (the United States), resulting in war. In his recent book, Destined for War, Allison pointed out that most of the 16 such cases of a rising power in history resulted in bloodshed. However, stepping back, it is plain to see that **China’s peaceful rise has already happened**. It is a fact on the ground, as evidenced by the enormity of its economy, its trading volume, and, yes, its increasing military strength. Compared to the rise of other great powers in history—the Athenian Empire, the Roman Empire, the British Empire, America’s manifest destiny, modern Germany, France, and Japan, all of which were accompanied by tremendous violence—China’s rise so far has been bigger and faster than them all. And yet, it has happened peacefully. **No invasion of any other country, no colonization, no war.** Yes, Allison may be right that the psychology of the Thucydides trap is still true. But in **substance, the world has already passed the point** at which such a conflict could be contemplated responsibly. And that is perhaps why China is now refocusing from hard power to soft, even as the rest of the world has seemed to go in the opposite direction. President Xi Jinping, for example, has called for “a community of shared destiny,” in which nations are **allowed their own development paths while working to increase interconnectedness.** In the policy arena, such soft power mostly takes the form of the Belt and Road Initiative, which leverages China’s massive capital and capacity to drive infrastructure-led development in other countries to spur economic growth that would ultimately benefit China itself. It is a new potential soft power proposition: “You don’t have to want to be like us, you don’t have to want what we want; you can participate in a new form of globalization while **retaining your own culture, ideology, and institutions.**” **This is**, in many ways, **the opposite of Nye’s formulation, with all the downfalls that approach entails: overreach, the illusion of universal appeals, and internal and external backlashes.** In the post-Cold War era, the West linked soft power and liberalism, but that coupling was never necessary. In the next century, it may well be soft power decoupled from ideology that could rule the day. There is no illusion, not least in Beijing, that any kind of soft power can exist and succeed without hard power. But China’s proposition is more accommodating of difference. By not forcing other countries into its own mold, China’s new form of soft power can mean a **more peaceful 21st century.** The world should embrace it.

## DA

#### Xi is successfully consolidating power now but *legitimacy* is key

Hale 11-8-21

(Erin, https://www.aljazeera.com/news/2021/11/8/xi-looks-to-consolidate-power-at-key-party-meeting)

Chinese President Xi Jinping is expected to further consolidate his leadership at a key meeting of the Communist Party’s Central Committee this week amid a flurry of flattering publicity from state media. The Central Committee is made up of more than 300 of the party’s top leaders who include provincial governors and party secretaries as well as financial and military elites. The Beijing meeting, which continues until Thursday, is expected to further pave the way for Xi to secure an unprecedented third term in office at next year’s Party Congress, one of China’s most important political meetings, which is held once every five years. While the National People’s Congress removed term limits in 2018, enabling Xi to rule China indefinitely, he needs the endorsement of top party leaders, says Tai Wei Lim, a research fellow adjunct at the National University of Singapore’s East Asian Institute. “[Xi] needs the legitimacy of leading members of the party for an unprecedented additional term, especially when he is not normatively following a term limit convention – convention, not law – in the post-Mao era,” Lim told Al Jazeera. Xi’s aspirations appear to be to take a place among China’s foremost Communist leaders, including Mao Zedong and Deng Xiaoping, who steered China through its political and economic reopening in the late 1970s and 80s. As the child of one of the party’s founding members and the country’s political elite, Xi is known as a “princeling” and since taking office in 2013, he has obtained a cult of personality not seen since Mao was in power. Earlier this year, the party marked its centenary and the upcoming Central Committee is expected to pass a “historical resolution” reviewing its achievements over the past 100 years, according to Xinhua news agency. The text will also uphold Xi’s “core position” within the party, it said. The party’s public relations blitz around Xi comes as China faces its internal struggles with a resurgence of COVID-19 cases, an ongoing energy crisis and a teetering real estate sector saddled in debt.

#### Xi’s rallying the party around space development – its central to his entire agenda

Loftus ’19 (Peter; 1st Lieutenant, US Air Force, M.A. in International Relations and Affairs from Johns Hopkins University; Spring 2019; “Counter and Cooperate: How Space Can Be Used to Advance US–China Cooperation While Curbing Beijing’s Terrestrial Excesses”; <https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-33_Issue-1/SEA-Loftus.pdf>; Air & Space Power Journal; accessed 9/1/19; TV)

Since People’s Republic of China (PRC) President Jinping XI came to power in 2012, China’s diplomatic disposition has experienced a profound evolution. Jinping XI is promoting his vision of the “Chinese Dream” and national rejuvenation, the goal of which is to reverse the “Century of Humiliation” that China suffered, from the start of the First Opium War in 1839 and lasting until the Chinese Communist Party (CCP) came to power in 1949. In testimony before the US–China Economic and Security Review Commission, Dr. Alison A. Kaufman, a senior Asia policy researcher with the Center for Naval Analyses, explained that this period provides a key foundational story for the CCP. “Today, this narrative has become a key legitimizer for CCP rule, because the CCP is portrayed as the only modern Chinese political party that was able to successfully stand up to foreign aggression.”2

The dilemma for Beijing is how to ascend without ensnaring itself and the US in Thucydides’s Trap. Previously the PRC abided by former paramount leader Deng Xiaoping’s dictum of Tao Guang Yang Hui, which translates to “lay low and bide one’s time.” The purpose of this strategy was to fight the perception that China is an ascendant threat, incurring preemptive hostilities from outside powers. Today, however, China is much more confident on the world stage. Beijing seeks to promote its vision for the future on the diplomatic front, and space policy plays an important role in this objective. According to James Andrew Lewis, the Center for Strategic & International Studies technology and public policy program director, China’s space endeavors are “. . . especially important to show that it has reclaimed its place among the leading nations of the world. China’s successes in space reinforce its claims to regional dominance by demonstrating that it is the most advanced among Asian nations, with technology and resources that others cannot match.”3 China’s space initiatives play an instrumental role in showing that it has returned to its place as a preeminent regional power. While China’s neighbors question US commitment to the Indo-Asia-Pacific, Beijing’s promulgation of a multidecade plan for developing space capabilities demonstrates its staying power and ambition.

China’s Informational Power

While China’s focus on diplomatic messaging travels outward, the informational element of Chinese space policy is mainly directed inward. To this day, the CCP’s legitimacy is premised upon a Faustian bargain with its citizens. In exchange for economic results, social improvement, and the respect of the world, the political elite expects loyalty and acquiescence from the public. The CCP’s space aspirations play a fundamental role in demonstrating the government’s ambitions for China’s future. They include landing a rover on the far side of the moon by 2018, landing a Mars rover by 2020, probing asteroids by 2022, sending humans to the moon by 2025, bringing Mars samples back by 2028, sending an exploratory mission to Jupiter by 2029, and establishing a lunar research station manned by robots with occasional astronaut visits by 2050.4 Shooting for the stars keeps the Chinese people’s eyes skyward and away from CCP malfeasance. To borrow Karl Marx’s reference to religion, Beijing’s space policy is an opiate for the Chinese masses.

China’s Military Power

The Gulf War had a visceral effect on Chinese military planners. The rapid neutralization of Saddam Hussein’s military demonstrated what decades of Cold War military spending were able to procure for the US armed forces, especially in the realm of command and control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR). The Chinese took this to heart and incorporated informationized warfare into their military doctrine in 1993.5 Increasingly, space has become a central focus of China’s national security strategy, which continues to expand outward from an immediate defense of the Chinese homeland to protecting interests overseas and even in space.

In this capacity, the People’s Liberation Army (PLA) is pursuing a comprehensive space strategy to allow for it to compete with near-peer adversaries. As the US–China Economic and Security Review Commission states:

#### Consolidation of power under Xi is vital to prevent CCP collapse.

Kuhn 16 — Robert Lawrence Kuhn, Columnist for *China Daily* and *South China Morning Post*, Author of *How China’s Leaders Think: The Inside Story of China's Past, Current and Future Leaders* and *The Man Who Changed China: The Life and Legacy of Jiang Zemin*—the first biography of a living Chinese leader, holds a Ph.D. in Anatomy and Brain Research from the Brain Research Institute at the University of California-Los Angeles and an M.S. in Management from the Sloan School of Management at the Massachusetts Institute of Technology, 2016 (“Why China needs Xi Jinping as its core leader,” *South China Morning Post*, November 20th, Available Online at <http://www.scmp.com/comment/insight-opinion/article/2047173/why-china-needs-xi-jinping-its-core-leader>, Accessed 01-27-2017)

When, at a recent party plenum, President Xi Jinping ( 習近平 ) was designated as “core” of the Communist Party’s Central Committee, some Western media were quick to condemn the rise of a new “strongman”. While recognising the significance of Xi as the core was correct, conjuring up visions of an emerging dictator was not.

I recalled my meeting with Xi years earlier, when he was still party secretary of Zhejiang (浙江) province. Even then he was criticising “empty talk” and advising, “We should never overestimate our accomplishments or indulge ourselves in our achievements”. I took note of how Xi stressed, “We need to assess ourselves objectively”. Hardly, in retrospect, the ruminations of a gestating dictator.

To understand why Xi is now the core, one must appreciate the complex challenges of our times. China is now facing multiple challenges: domestically – slow growth, industrial overcapacity, endemic pollution, imbalanced development, income disparity, social injustice, social service demands; and, internationally – wars, regional conflicts, sluggish economies, volatile markets, trade protectionism, ethnic clashes, terrorism, geopolitical rivalries, and territorial disputes in the South and East China seas.

Most critically, because China must deepen its reforms to achieve its oft-promised goal of a “moderately prosperous society” by 2020, the resistance of entrenched interest groups must be overcome. More subtly, there is what some call a pervasive “soft resistance” – local officials who do not do their job and economic elites who migrate.

If reform had been progressing smoothly, then why strengthen central authority by investing Xi with the status of core leader? Xi has encountered obstacles; if there were no obstacles, there would be no need for a core leader.

I have been speaking to party officials and theorists about Xi as core leader. In fact, the necessity of having a leadership core to maintain stability and expedite reform is the first and foremost of what I found to be four factors relating to Xi’s elevation.

A second factor is that not only does Xi have the responsibility for China’s transformation, he is also accountable for it. Moreover, he has shown courage in confronting and dismantling a vast, corrupt system of bribery, patronage and illicit wealth accretion.

A third factor is that Xi as the core does not end, and even may not diminish, the cardinal principle of “democratic centralism”. The party bolsters each of the concepts: encouraging the democratic solicitation of input and feedback from members, lower-ranked officials, and the public; and strengthening centralism through Xi’s leadership of the principal levers of power (his positions as party general secretary, head of state, chairman of the Central Military Commission, and head of the “leading groups” on reform, national security and internet security).

A fourth factor is that a core is required to manage the party more strictly and thereby give members and the public more confidence. Witness Xi’s relentless and unprecedented anti-corruption campaign, which is altering how government officials and industry managers work and even think. Let no one assume that Xi’s battle against corruption has been risk-free.

Significantly, these four factors undergirding Xi as the core leader map onto his overarching political framework, his strategic blueprint called “The Four Comprehensives” – a moderately prosperous society, reform, rule of law, party discipline.

Xi’s core status arises, we’re told, through the collective will of the party and the people. Becoming party core is not an automatic consequence of being general secretary; a core leader must fit the times and the status must be earned.

Speaking at a press conference following the 18th Central Committee’s sixth plenum last month, Huang Kunming (黄坤明), executive vice-minister of the committee’s Publicity Department, said that the “central and local departments as well as the military all expressed their support” for Xi’s position as party core, adding that this decision was “based on the valuable experience of the party and we feel keenly about it”.

Huang explained that “a core is needed to ensure that the party will be the governing party”, describing it as significant for upholding the Central Committee’s authority and maintaining the central, unified leadership of the party and for its “staying true to its mission”.

Therefore, party theorists explain, Xi as core leader is more a ratification of reality than a shift of fundamentals.

What does Xi as core mean in a historical context? It was Deng Xiaoping (鄧小平) who introduced the concept when he designated Jiang Zemin (江澤民) as “core of the third generation” of central leaders, bolstering Jiang’s stature following his unexpected appointment as party leader in 1989. At the time, China was facing the dual impediments of economic stagnation and social uncertainty at home, and economic quarantine and diplomatic isolation abroad. As Deng pointed out: “Any leading group should have a core; a leadership with no core is unreliable.”

Only then did Deng retrospectively apply the novel term to Mao Zedong (毛澤東) and to himself, as core of the first and second generations, respectively. (Of course, Mao was so utterly dominant that calling him core during his lifetime would have seemed a demotion. Deng remained core even when he no longer held any official position.)

Today’s world is more complex. China faces threats at home and abroad. Volatility grows and uncertainty abounds – the Middle East and Donald Trump are offered as evidence. The need to secure China’s stability is more essential than ever, and thus to strengthen Xi’s authority is a primary reason, I’m told, for designating Xi as core leader. Party theorists say China “urgently” requires a political nucleus that is sophisticated and nuanced, attuned to contemporary times. Though conditions now differ from those in 1989, Deng’s admonition rings timelessly true.

However, that a core leader is needed now does not mean one will always be needed. When China becomes a fully modernised nation, perhaps by mid-century, conditions may change again.

I hear frequently of the “painful lessons of China’s century of blood and tears” and that for China not to have a tested and authoritative leadership core would be “unthinkable”. Party inner talk says “Xi Jinping has passed the test of the people” to be China’s political core, leadership core, and a core of the times.

Chinese scholars argue that “core” is a unique characteristic of Chinese political theory – however inapplicable (even inexplicable) in Western political theory. They call Western concerns that Xi as core leader means that “a new emperor is born” wildly unfounded, even paranoic. In feudal society, the emperor ruled unconditionally with arbitrary imperial power, and in such a “command-obey” system, goes the argument, there is simply no need for a core.

Rather, given today’s party political structure, the concept of a core both strengthens cohesion and serves to prevent a personality cult, not to promote one. Having a core means acknowledging that the party system is not the “emperor system” – absolute power is rejected – and that the optimum system, at least for the foreseeable future, is a combination of concentrated centralism and democratic collective leadership.

Corroborating this functional balance, in the communiqué issued following the sixth plenum, the “collective leadership system” is reconfirmed. It states: “The implementation of collective leadership and personal division of labour is an important component of democratic centralism and must always be adhered to.” And it stresses: “Any organisation or individual shall, under any circumstance, not be allowed to violate this system for any reason.” The three “any’s” seem no accident.

Some analysts see contradictions. On the one hand, the communiqué calls for democracy and constructive criticism internally within the party. On the other, disobeying the central leadership is forbidden, backed by vigilant supervision and tough discipline.

Yet to read these statements as contradictory is to misunderstand what is happening here. Xi appreciates the complex and arduous tasks that lie ahead. He told me so a decade ago, and it is obviously truer today than it was then. The statements are harmonised, first, by the party’s motivation to seek optimum policies for the country, and second, by keeping most of the divergent views internal.

True loyalty is telling leadership in private what one really believes is in their best interests, not pandering and fawning by repeating what one thinks leadership wants to hear. Though there are concerns, no one here worries that Xi will become Mao.

China is now the world’s largest trading nation and its second-largest economy. China’s diplomacy is expanding and its military is growing. From its Belt and Road initiative building infrastructure and facilitating trade in over 60 developing countries to its leading role in the UN peacekeeping forces, China, the “Middle Kingdom”, is involved in every meaningful matter of international affairs.

So, what kind of China do we want? Certainly not one with weak central leadership and fragmented citadels of power. With its huge and imbalanced population, and its diverse culture and traditions, China today requires a leader with sufficient strength and prestige to secure social stability, drive economic reform, and guide it in being a responsible world power. Xi as core leader should be good for China and, thus, for the world.

#### CCP instability causes nuke war—extinction.

Perkinson 12 — Jessica, Faculty of the School of International Service of American University in Partial Fulfilment of the Requirements for the Degree of Master of Arts in International Affairs; reviewed by: Quansheng Zhao, Professor of international relations and Chair of Asian Studies Program Research Council at American University, and John C. King, Assistant Professor School of International Service, 2012 (“The Potential for Instability in the PRC: How the Doomsday Theory Misses the Mark,” American University, April 19th, Available Online at http://aladinrc.wrlc.org/bitstream/handle/1961/10330/Perkinson\_american\_0008N\_10238display.pdf?sequence=1)

Should the CCP undergo some sort of dramatic transformation – whether that be significant reform or complete collapse, as some radical China scholars predict2 – the implications for international and US national security are vast. Not only does China and the stability of the CCP play a significant role in the maintenance of peace in the East Asian region, but China is also relied upon by many members of the international community for foreign direct investment, economic stability and trade. China plays a key role in maintaining stability on the Korean Peninsula as one of North Korea’s only allies, and it is argued that instability within the Chinese government could also lead to instability in the already sensitive military and political situation across the Taiwan Strait. For the United States, the effect of instability within the CCP would be widespread and dramatic. As the United States’ largest holder of US treasury securities, instability or collapse of the CCP could threaten the stability of the already volatile economic situation in the US. In addition, China is the largest trading partner of a number of countries, including the US, and the US is reliant upon its market of inexpensive goods to feed demand within the US.

It is with this in mind that China scholars within the United States and around the world should be studying this phenomenon, because the potential for reform, instability or even collapse of the CCP is of critical importance to the stability of the international order as a whole. For the United States specifically, the potential - or lack thereof - for reform of the CCP should dictate its foreign policy toward China. If the body of knowledge on the stability of the Chinese government reveals that the Chinese market is not a stable one, it is in the best interests of the United States to look for investors and trade markets elsewhere to lessen its serious dependence on China for its economic stability, particularly in a time of such uncertain economic conditions within the US.

## FW

**1] Pleasure and pain *are* intrinsic value and disvalue – everything else *regresses* – robust neuroscience.**

**Blum et al. 18**

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**Pleasure** is not only one of the three primary reward functions but it also **defines reward.** As homeostasis explains the functions of only a limited number of rewards, the principal reason why particular stimuli, objects, events, situations, and activities are rewarding may be due to pleasure. This applies first of all to sex and to the primary homeostatic rewards of food and liquid and extends to money, taste, beauty, social encounters and nonmaterial, internally set, and intrinsic rewards. Pleasure, as the primary effect of rewards, drives the prime reward functions of learning, approach behavior, and decision making and provides the **basis for hedonic theories** of reward function. We are attracted by most rewards and exert intense efforts to obtain them, just because they are enjoyable [10]. Pleasure is a passive reaction that derives from the experience or prediction of reward and may lead to a long-lasting state of happiness. The word happiness is difficult to define. In fact, just obtaining physical pleasure may not be enough. One key to happiness involves a network of good friends. However, it is not obvious how the higher forms of satisfaction and pleasure are related to an ice cream cone, or to your team winning a sporting event. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure [14]. Pleasure as a hallmark of reward is sufficient for defining a reward, but it may not be necessary. A reward may generate positive learning and approach behavior simply because it contains substances that are essential for body function. When we are hungry, we may eat bad and unpleasant meals. A monkey who receives hundreds of small drops of water every morning in the laboratory is unlikely to feel a rush of pleasure every time it gets the 0.1 ml. Nevertheless, with these precautions in mind, we may define any stimulus, object, event, activity, or situation that has the potential to produce pleasure as a reward. In the context of reward deficiency or for disorders of addiction, homeostasis pursues pharmacological treatments: drugs to treat drug addiction, obesity, and other compulsive behaviors. The theory of allostasis suggests broader approaches - such as re-expanding the range of possible pleasures and providing opportunities to expend effort in their pursuit. [15]. It is noteworthy, the first animal studies eliciting approach behavior by electrical brain stimulation interpreted their findings as a discovery of the brain’s pleasure centers [16] which were later partly associated with midbrain dopamine neurons [17–19] despite the notorious difficulties of identifying emotions in animals. Evolutionary theories of pleasure: The love connection BO:D Charles Darwin and other biological scientists that have examined the biological evolution and its basic principles found various mechanisms that steer behavior and biological development. Besides their theory on natural selection, it was particularly the sexual selection process that gained significance in the latter context over the last century, especially when it comes to the question of what makes us “what we are,” i.e., human. However, the capacity to sexually select and evolve is not at all a human accomplishment alone or a sign of our uniqueness; yet, we humans, as it seems, are ingenious in fooling ourselves and others–when we are in love or desperately search for it. It is well established that modern biological theory conjectures that **organisms are** the **result of evolutionary competition.** In fact, Richard Dawkins stresses gene survival and propagation as the basic mechanism of life [20]. Only genes that lead to the fittest phenotype will make it. It is noteworthy that the phenotype is selected based on behavior that maximizes gene propagation. To do so, the phenotype must survive and generate offspring, and be better at it than its competitors. Thus, the ultimate, distal function of rewards is to increase evolutionary fitness by ensuring the survival of the organism and reproduction. It is agreed that learning, approach, economic decisions, and positive emotions are the proximal functions through which phenotypes obtain other necessary nutrients for survival, mating, and care for offspring. Behavioral reward functions have evolved to help individuals to survive and propagate their genes. Apparently, people need to live well and long enough to reproduce. Most would agree that homo-sapiens do so by ingesting the substances that make their bodies function properly. For this reason, foods and drinks are rewards. Additional rewards, including those used for economic exchanges, ensure sufficient palatable food and drink supply. Mating and gene propagation is supported by powerful sexual attraction. Additional properties, like body form, augment the chance to mate and nourish and defend offspring and are therefore also rewards. Care for offspring until they can reproduce themselves helps gene propagation and is rewarding; otherwise, many believe mating is useless. According to David E Comings, as any small edge will ultimately result in evolutionary advantage [21], additional reward mechanisms like novelty seeking and exploration widen the spectrum of available rewards and thus enhance the chance for survival, reproduction, and ultimate gene propagation. These functions may help us to obtain the benefits of distant rewards that are determined by our own interests and not immediately available in the environment. Thus the distal reward function in gene propagation and evolutionary fitness defines the proximal reward functions that we see in everyday behavior. That is why foods, drinks, mates, and offspring are rewarding. There have been theories linking pleasure as a required component of health benefits salutogenesis, (salugenesis). In essence, under these terms, pleasure is described as a state or feeling of happiness and satisfaction resulting from an experience that one enjoys. Regarding pleasure, it is a double-edged sword, on the one hand, it promotes positive feelings (like mindfulness) and even better cognition, possibly through the release of dopamine [22]. But on the other hand, pleasure simultaneously encourages addiction and other negative behaviors, i.e., motivational toxicity. It is a complex neurobiological phenomenon, relying on reward circuitry or limbic activity. It is important to realize that through the “Brain Reward Cascade” (BRC) endorphin and endogenous morphinergic mechanisms may play a role [23]. While natural rewards are essential for survival and appetitive motivation leading to beneficial biological behaviors like eating, sex, and reproduction, crucial social interactions seem to further facilitate the positive effects exerted by pleasurable experiences. Indeed, experimentation with addictive drugs is capable of directly acting on reward pathways and causing deterioration of these systems promoting hypodopaminergia [24]. Most would agree that pleasurable activities can stimulate personal growth and may help to induce healthy behavioral changes, including stress management [25]. The work of Esch and Stefano [26] concerning the link between compassion and love implicate the brain reward system, and pleasure induction suggests that social contact in general, i.e., love, attachment, and compassion, can be highly effective in stress reduction, survival, and overall health. Understanding the role of neurotransmission and pleasurable states both positive and negative have been adequately studied over many decades [26–37], but comparative anatomical and neurobiological function between animals and homo sapiens appear to be required and seem to be in an infancy stage. Finding happiness is different between apes and humans As stated earlier in this expert opinion one key to happiness involves a network of good friends [38]. However, it is not entirely clear exactly how the higher forms of satisfaction and pleasure are related to a sugar rush, winning a sports event or even sky diving, all of which augment dopamine release at the reward brain site. Recent multidisciplinary research, using both humans and detailed invasive brain analysis of animals has discovered some critical ways that the brain processes pleasure. Remarkably, there are pathways for ordinary liking and pleasure, which are limited in scope as described above in this commentary. However, there are **many brain regions**, often termed hot and cold spots, that significantly **modulate** (increase or decrease) our **pleasure or** even produce **the opposite** of pleasure— that is disgust and fear [39]. One specific region of the nucleus accumbens is organized like a computer keyboard, with particular stimulus triggers in rows— producing an increase and decrease of pleasure and disgust. Moreover, the cortex has unique roles in the cognitive evaluation of our feelings of pleasure [40]. Importantly, the interplay of these multiple triggers and the higher brain centers in the prefrontal cortex are very intricate and are just being uncovered. Desire and reward centers It is surprising that many different sources of pleasure activate the same circuits between the mesocorticolimbic regions (Figure 1). Reward and desire are two aspects pleasure induction and have a very widespread, large circuit. Some part of this circuit distinguishes between desire and dread. The so-called pleasure circuitry called “REWARD” involves a well-known dopamine pathway in the mesolimbic system that can influence both pleasure and motivation. In simplest terms, the well-established mesolimbic system is a dopamine circuit for reward. It starts in the ventral tegmental area (VTA) of the midbrain and travels to the nucleus accumbens (Figure 2). It is the cornerstone target to all addictions. The VTA is encompassed with neurons using glutamate, GABA, and dopamine. The nucleus accumbens (NAc) is located within the ventral striatum and is divided into two sub-regions—the motor and limbic regions associated with its core and shell, respectively. The NAc has spiny neurons that receive dopamine from the VTA and glutamate (a dopamine driver) from the hippocampus, amygdala and medial prefrontal cortex. Subsequently, the NAc projects GABA signals to an area termed the ventral pallidum (VP). The region is a relay station in the limbic loop of the basal ganglia, critical for motivation, behavior, emotions and the “Feel Good” response. This defined system of the brain is involved in all addictions –substance, and non –substance related. In 1995, our laboratory coined the term “Reward Deficiency Syndrome” (RDS) to describe genetic and epigenetic induced hypodopaminergia in the “Brain Reward Cascade” that contribute to addiction and compulsive behaviors [3,6,41]. Furthermore, ordinary “liking” of something, or pure pleasure, is represented by small regions mainly in the limbic system (old reptilian part of the brain). These may be part of larger neural circuits. In Latin, hedus is the term for “sweet”; and in Greek, hodone is the term for “pleasure.” Thus, the word Hedonic is now referring to various subcomponents of pleasure: some associated with purely sensory and others with more complex emotions involving morals, aesthetics, and social interactions. The capacity to have pleasure is part of being healthy and may even extend life, especially if linked to optimism as a dopaminergic response [42]. Psychiatric illness often includes symptoms of an abnormal inability to experience pleasure, referred to as anhedonia. A negative feeling state is called dysphoria, which can consist of many emotions such as pain, depression, anxiety, fear, and disgust. Previously many scientists used animal research to uncover the complex mechanisms of pleasure, liking, motivation and even emotions like panic and fear, as discussed above [43]. However, as a significant amount of related research about the specific brain regions of pleasure/reward circuitry has been derived from invasive studies of animals, these cannot be directly compared with subjective states experienced by humans. In an attempt to resolve the controversy regarding the causal contributions of mesolimbic dopamine systems to reward, we have previously evaluated the three-main competing explanatory categories: “liking,” “learning,” and “wanting” [3]. That is, dopamine may mediate (a) liking: the hedonic impact of reward, (b) learning: learned predictions about rewarding effects, or (c) wanting: the pursuit of rewards by attributing incentive salience to reward-related stimuli [44]. We have evaluated these hypotheses, especially as they relate to the RDS, and we find that the incentive salience or “wanting” hypothesis of dopaminergic functioning is supported by a majority of the scientific evidence. Various neuroimaging studies have shown that anticipated behaviors such as sex and gaming, delicious foods and drugs of abuse all affect brain regions associated with reward networks, and may not be unidirectional. Drugs of abuse enhance dopamine signaling which sensitizes mesolimbic brain mechanisms that apparently evolved explicitly to attribute incentive salience to various rewards [45]. Addictive substances are voluntarily self-administered, and they enhance (directly or indirectly) dopaminergic synaptic function in the NAc. This activation of the brain reward networks (producing the ecstatic “high” that users seek). Although these circuits were initially thought to encode a set point of hedonic tone, it is now being considered to be far more complicated in function, also encoding attention, reward expectancy, disconfirmation of reward expectancy, and incentive motivation [46]. The argument about addiction as a disease may be confused with a predisposition to substance and nonsubstance rewards relative to the extreme effect of drugs of abuse on brain neurochemistry. The former sets up an individual to be at high risk through both genetic polymorphisms in reward genes as well as harmful epigenetic insult. Some Psychologists, even with all the data, still infer that addiction is not a disease [47]. Elevated stress levels, together with polymorphisms (genetic variations) of various dopaminergic genes and the genes related to other neurotransmitters (and their genetic variants), and may have an additive effect on vulnerability to various addictions [48]. In this regard, Vanyukov, et al. [48] suggested based on review that whereas the gateway hypothesis does not specify mechanistic connections between “stages,” and does not extend to the risks for addictions the concept of common liability to addictions may be more parsimonious. The latter theory is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions (e.g., RDS). This commonality has identifiable neurobiological substrate and plausible evolutionary explanations. Over many years the controversy of dopamine involvement in especially “pleasure” has led to confusion concerning separating motivation from actual pleasure (wanting versus liking) [49]. We take the position that animal studies cannot provide real clinical information as described by self-reports in humans. As mentioned earlier and in the abstract, on November 23rd, 2017, evidence for our concerns was discovered [50] In essence, although nonhuman primate brains are similar to our own, the disparity between other primates and those of human cognitive abilities tells us that surface similarity is not the whole story. Sousa et al. [50] small case found various differentially expressed genes, to associate with pleasure related systems. Furthermore, the dopaminergic interneurons located in the human neocortex were absent from the neocortex of nonhuman African apes. Such differences in neuronal transcriptional programs may underlie a variety of neurodevelopmental disorders. In simpler terms, the system controls the production of dopamine, a chemical messenger that plays a significant role in pleasure and rewards. The senior author, Dr. Nenad Sestan from Yale, stated: “Humans have evolved a dopamine system that is different than the one in chimpanzees.” This may explain why the behavior of humans is so unique from that of non-human primates, even though our brains are so surprisingly similar, Sestan said: “It might also shed light on why people are vulnerable to mental disorders such as autism (possibly even addiction).” Remarkably, this research finding emerged from an extensive, multicenter collaboration to compare the brains across several species. These researchers examined 247 specimens of neural tissue from six humans, five chimpanzees, and five macaque monkeys. Moreover, these investigators analyzed which genes were turned on or off in 16 regions of the brain. While the differences among species were subtle, **there was** a **remarkable contrast in** the **neocortices**, specifically in an area of the brain that is much more developed in humans than in chimpanzees. In fact, these researchers found that a gene called tyrosine hydroxylase (TH) for the enzyme, responsible for the production of dopamine, was expressed in the neocortex of humans, but not chimpanzees. As discussed earlier, dopamine is best known for its essential role within the brain’s reward system; the very system that responds to everything from sex, to gambling, to food, and to addictive drugs. However, dopamine also assists in regulating emotional responses, memory, and movement. Notably, abnormal dopamine levels have been linked to disorders including Parkinson’s, schizophrenia and spectrum disorders such as autism and addiction or RDS. Nora Volkow, the director of NIDA, pointed out that one alluring possibility is that the neurotransmitter dopamine plays a substantial role in humans’ ability to pursue various rewards that are perhaps months or even years away in the future. This same idea has been suggested by Dr. Robert Sapolsky, a professor of biology and neurology at Stanford University. Dr. Sapolsky cited evidence that dopamine levels rise dramatically in humans when we anticipate potential rewards that are uncertain and even far off in our futures, such as retirement or even the possible alterlife. This may explain what often motivates people to work for things that have no apparent short-term benefit [51]. In similar work, Volkow and Bale [52] proposed a model in which dopamine can favor NOW processes through phasic signaling in reward circuits or LATER processes through tonic signaling in control circuits. Specifically, they suggest that through its modulation of the orbitofrontal cortex, which processes salience attribution, dopamine also enables shilting from NOW to LATER, while its modulation of the insula, which processes interoceptive information, influences the probability of selecting NOW versus LATER actions based on an individual’s physiological state. This hypothesis further supports the concept that disruptions along these circuits contribute to diverse pathologies, including obesity and addiction or RDS.

**2] No act omission distinction – outweighs on actor specificity because different actors have different obligations.**

**Shwartz 19** Schwartz, Gregory. (2019). THE ETHICS OF OMISSION. Think, 18(51), 117–121. doi:10.1017/s1477175618000404

A trolley worker in Victoria London is near the tracks when he sees a runaway trolley barrelling down. On its current path, it will kill three people tied to the tracks. Seeing a lever, the worker can deviate the trolley’s path to one where only one person is tied down. The worker must make a decision, to kill a person or to let three people die. This thought experiment is a classic opener to the field of Normative Ethics, which focuses on determining the morality of decisions. This is because the trolley problem highlights the difference between the two main ethical theories, Deontology and Utilitarianism, which are best known in the form championed by Immanuel Kant and John Stuart Mill, respectively. Kant’s Deontology, which focuses on inviolable, categorical rules, argues against pulling the lever because killing is always wrong. Under this theory, the three people who would die do so as a result of the worker’s omission and are consequently not the worker’s fault. However, if the worker pulls the lever then that one person’s death would have been the worker’s fault because that death was a direct result of the worker’s action.Alternatively, Mill’s Utilitarianism, which focuses on maximizing good, argues that the worker should pull the lever so that one person dies instead of three. Under this theory, each life is regarded as equal regardless of whether it is ended by act or omission. Thus, the validity of Deontology is contingent on there being an Act–Omission Distinction. If the Act–Omission Distinction doesn’t exist, then there would be no difference between killing one person and letting one person die, meaning that Deontology achieves nothing in the Trolley problem except three times more death than Utilitarianism. This Act–Omission Distinction, whether having the power to act is the moral equivalent of acting, was first assimilated into popular culture in 1962 when comic writer Stan Lee wrote that ‘with great power comes great responsibility’. In the comic, Spider-man learns this lesson when a burglar, whom Spider-man chose not to stop earlier that day, kills his Uncle Ben. Afterwards, Spider-man feels that he killed his Uncle Ben by refusing to act, and the fact that he killed Uncle Ben by omission brings Spider-man no solace. This sounds plausible. But suppose that Spider-man had not received his powers by chance. Rather, the citizens of New York held an election to appoint their protector. After receiving the same power as the randomly selected Spiderman, the Elected Spider-man chooses to let the burglar escape. It seems that this Elected Spider-man would be more blameworthy for omitting to stop a burglar than the randomly selected Spider-man, suggesting that power alone is not a direct contributor to responsibility. Additionally, suppose that someone is driving a car when a pedestrian appears in front of her. Failure to hit the brakes would be an omission; however, it seems odd not to hold the driver accountable for hitting the pedestrian. This Schwartz The Ethics of Omission † 118 https://doi.org/10.1017/S1477175618000404 21 Feb 2019 at 13:32:32, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. Downloaded from https://www.cambridge.org/core. Eugene McDermott Library, University of Texas at Dallas, on is where intuition seems to contradict itself, as in the Elected Spider-man and Crashing Car scenarios the omitter seems more culpable than the randomly selected Spider-man, despite committing the same omission; suggesting that there is something wrong with Spider-man’s plausible-sounding argument after all. Normative Ethics tends to be abstract and difficult to conceptualize, so an easier way to explore this conflict further is by examining the application of these moral concepts in the real world. This application of Normative Ethics is commonly known as a separate field, Applied Ethics. One area of application for the Act–Omission Distinction is Law, where it is referred to as the Actus Reus–Omission Distinction. In this, ‘Actus Reus’ refers to a physical action, opposed to ‘Mens Rea’, or mental action. Legally, Actus Reus does not equate to Omission except in three types of situations. The first situation is when the defendant had assumed responsibility for the care of dependents. This was seen in R v Stone & Dobinson, when Stone and Dobinson had agreed to care for Stone’s anorexic sister. They were convicted of manslaughter because they had assumed responsibility for her. The second situation is when the defendant has created the danger. This solves the Crashing Car dilemma. Despite not hitting the brakes constituting an omission, the driver is still responsible for stopping because the driver is the one who caused the situation in the first place. The third is when the defendant is required under contract to act. Should a bodyguard agree to protect someone, then by omitting to do so that bodyguard may be held legally culpable. Having secured this understanding of the Actus Reus– Omission Distinction in Applied Ethics, its implications can be translated back over to Normative Ethics. However, while deriving the underlying, driving moral concepts from rules, it is important to note situational differences. Law, for example, is also bound by governmental constraints, Think Spring 2019 † 119 https://doi.org/10.1017/S1477175618000404 21 Feb 2019 at 13:32:32, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. Downloaded from https://www.cambridge.org/core. Eugene McDermott Library, University of Texas at Dallas, on whereas the goal of this article is to establish a more universal ideal rather than something to be enforced by a specific actor. This becomes relevant as universal ideals can call upon someone to be a Good Samaritan, someone who goes out of their way, at some cost to themselves, to help those in need. However, it would be highly coercive should a government demand that people help others at a cost to themselves. Now peering beyond these actor-related constraints to find the underlying ethic, it is apparent that omission doesn’t default to omission except in the three scenarios described above, so the question is what makes those circumstances special. One common trait is that each omission was preceded by an act. Before Stone and Dobinson’s omission to care for Stone’s sister, there came the act of accepting responsibility for her. Before the omission to hit the brakes the driver had to take the action of pressing the accelerator. Before the bodyguard’s omission to protect his client, there came the act of accepting to protect the client. However, the issue with equating omissions preceded by an act with acts is that every omission is preceded by an act. Since birth, people take actions and those actions determine where and when they are, meaning that every time a person is in a position to engage in omission their presence there can be traced back to an action. Thus, it becomes necessary to look at the second common trait in the three scenarios, that there is a connection between the victim and the omitter. This connection can be contractual, such as with the bodyguard, it could be verbal, such as with Stone and Dobinson, or it could be physical, such as with the driver, but there must be a connection. So Spider-man’s great power doesn’t come with great responsibility at the time of Uncle Ben’s death as there was no connection between Spider-man and the burglar that he let escape. It was only afterwards, when Spider-man made a commitment to protect New York, that he became obligated to help when he is able. Thus, should the exact scenario occur, now that Spider-man has declared himself Schwartz The Ethics of Omission † 120 https://doi.org/10.1017/S1477175618000404 21 Feb 2019 at 13:32:32, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. Downloaded from https://www.cambridge.org/core. Eugene McDermott Library, University of Texas at Dallas, on New York’s protector he would be morally responsible for omitting to stop the burglar. This interpretation of the Act–Omission Distinction does not absolve groups such as the government from the obligation to act. Just like the Elected Spider-Man, governments only have great power for the purpose of aiding their citizens. Thus, when policymakers (or elected spider-men) accept their position, they accept responsibility to use that power for the public’s benefit. This means that they are responsible for their omissions to do so. Great responsibility doesn’t inherently come with great power. But when power allocation is purposeful, great power is given for a great purpose. Whether this takes the form of being a caretaker, policymaker, or elected spiderman, accepting that power means accepting the responsibility to fulfil that purpose. Spider-man’s premise is an easy one to accept, because power comes with responsibility so often that it’s hard not to correlate the two. But it is important to recognize that power doesn’t spawn responsibility. Rather, power and responsibility come from the same source: consent. Ultimately, the root of responsibility is consent.

**3] Weighability – only consequentialism can explain the ethical difference in breaking a promise to take someone to the hospital and breaking a promise to take someone to lunch**

**A] Resolvability – there’s no way to weigh between competing offense under a deontological fw which means their fw can’t guide action**

**B] Intuitions – they’re a necessary side constraint on all ethics – if a very well justified logical syllogism concluded "murder good” you wouldn’t say “huh I guess murder is good” you would abandon it**

## Case

#### Zero solvency—1AC Sheehan literally doesn’t mention private companies, only government non-military agencies like NASA. This means they have no ev about the effects of *private companies*, which means their advantage is moot and you can presume neg.

#### The US government is perfectly positioned to focus on space governance and let private entities develop tech – this avoids bilateral or unilateral missions that increase the chance for conflict and space weaponization while creating effective multilateral agreements that spill over

Rosenberg and Marber 21 (Mark Y. - CEO of Geoquant and an adjunct professor at Columbia University’s School of International and Public Affairs, Peter - teaches at Harvard University and is a senior portfolio manager at Aperture Investors, 2/22, “America Needs a Supercharged Space Program,” [accessed 9/25/21], <https://foreignpolicy.com/2021/02/22/biden-space-force-race-policy-rockets-china/>)

In 2015, the U.S. government granted U.S. citizens the right to own any materials they extract in space, blowing open the door for civilian space business. In 2018, China launched a reconnaissance rover on the moon’s far side that’s been gathering data for more than 18 months now. In late 2019, then-President Donald Trump launched the formation of the U.S. Space Force as part of the military, while early 2020 saw the National Aeronautics and Space Administration (NASA) sign a contract with Axiom Space to build the first commercial space station. And in October 2020, the United States led the signing of the Artemis Accords, a set of bilateral agreements on space with Australia, Canada, Italy, Japan, Luxembourg, Italy, the United Kingdom, and the United Arab Emirates, which deliberately skirted the United Nations and did not include space rivals such as China and Russia. (Ukraine and Brazil were later added to the accords.) Although this pact claims to affirm the Outer Space Treaty, it actually increases the potential for conflict by expanding the interpretation of commercial space law while drawing hard geopolitical borders. Without Russia and especially China on board, much of the world will see the Artemis Accords as the informal rulebook of a cliquish club rather than a true multilateral agreement. Meanwhile, a new space race is gathering stream: In addition to this year’s unmanned missions to Mars, both the United States and China are planning moon landings later this decade. The Biden administration must prioritize a more multilateral approach to space governance than what was taken under Trump. Just like on Earth, a lack of international standards in space will likely lead to chaotic, wasteful competition. A 2011 U.S. law blocking NASA from cooperating with Chinese agencies has already shut China out of the U.S.-Russian International Space Station, prompting the Chinese to start building their own while partnering with Russia on a lunar research station. Revising this law would be a good place for the Biden administration to start. Cooperating with China in space might be a sensible hedge against growing conflict on Earth. Unregulated space activity could create a myriad of problems from accidentally or intentionally blocked data transmission to orbital pollution from too many space objects. Indeed, U.S. companies are currently the worst offenders, highlighting the need for more targeted regulation. Just a few uncontrolled collisions could generate enough debris to render near-Earth space unusable. And of course, no one wants to see space weaponized with extremely expensive, escalating arms races. Given private U.S. companies’ increasingly aggressive push to expand space exploration, the U.S. government is in a position to structure a more effective extraterrestrial regulatory regime. Renewed U.S. leadership founded on rebuilt space capabilities will be key to any hope for multilateral space cooperation. A more dedicated focus on space governance and a more aggressive approach to exploration can be the underpinnings of a future “New Space Deal.” A supercharged space program can help build entire new industries, create new jobs, green the economy, turbocharge next-generation communications, and expand the frontiers of science and technology. By uniting Americans behind a common purpose, it could even help mend the country’s frayed democracy. It would also reestablish Washington’s leadership in the fight against climate change and for a stronger multilateral system. Who else but the United States could even contemplate such a bold plan?

#### Non-state actors in space are conflict dampeners – they avoid geopolitical tension and have financial incentives to keep conflict low

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In the terms of privatization and space security, space remains relatively untapped, but commercial and military benefits from space exploration/exploitation could even lead to ‘privatization of space’. Such privatization will result from growing pressure on spacefaring countries to defect from cooperation, since is less viable with good number of multiple actors who entered the space.36 However, space policy and space research are characterized by very high costs, which are rather impossible to bear by private companies, limited by economic calculation. As pointed out earlier, under-investment in technological development by private companies it is related to the fact that these actors are not focused on profits of a social nature, such as improving the quality of life of the recipient of the product.37 This makes some technology, potentially beneficial to society, not developed or introduced into use, because the profit margin is too small to make this viable for commercial players. To conclude, privatization of space security can develop in unexpected ways, but in today’s space environment private actors would rather play the role of security regulators than security providers. When investment in space technologies is less profitable than other areas of economy, private actors would focus on soft law and conflict prevention in space, and new private initiatives will appear. For example, apart from important space companies, as SpaceX or Blue Origin active in outer space, other private actors as Secure World Foundation (SWF), who focus on space sustainability, will play more important role in crafting international guidelines for space activities.38 This path the way for future solutions and projects, as cleaning the space debris, extracting resources from asteroids and planetoids, refuelling satellites, providing payload capabilities for governmental entities on market-based logic, will be based on activity non-state actors, providing soft law and regulatory solutions, where space faring states are unable to find any compromise. Therefore private companies will be in fact global (or space) regulators, as part of UNCOPUS, being involved in space activities.39 The last argument for private involvement in space security comes from an approach based on common good and resilience of space assets, emphasized by the Project Ploughshares, as an important part of space security. As of 2017 there are more than 700,000 man-made objects on the Earth’s orbit bigger than 1 cm, while 17,000 of them are bigger than 10 cm.40 Some of them are traced by SSA systems, both American and European, but these systems are public-military owned, and private operators are not granted any access to this data. Any collision of space object with space debris, even with small particles, might result in a chain reaction, called Kessler’s syndrome, and not only private but public, and military assets will be destroyed or impaired. In such conditions, a reluctant cooperation between the public and private sector, and unwillingness to share vulnerable data by public actors seem to confirm that private space activity is more than necessary. This is an apparent case when logic of mistrust between state powers must be overcome by private actors, perhaps by suggesting common preferences for debris mitigation, and space situational awareness. In the case of space debris, Space Data Association, an initiative supported by private sector, with its main aim to enhance data sharing between commercial satellite operators, could be an example of nascent public good provided by private actors for the sake of global security.

#### Space weaponization and arms racing ensure space war goes nuclear – only strong private competition can check conflict

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Abstract. The military use of space, including in support of nuclear weapons infrastructure, has greatly increased over the past 30 years. In the current era, **rising geopolitical tensions between** the United States and Russia and China **have led to assumptions** in all three major space powers **that warfighting in space now is inevitable, and possible because of rapid technological advancements**. New capabilities for disrupting and destroying satellites include radio-frequency jamming, the use of lasers, maneuverable space objects and more capable direct-ascent anti-satellite weapons. **This situation, however, threatens international security and stability among nuclear powers. There is a continuing and necessary role for diplomacy, especially the establishment of normative rules of behavior, to reduce risks of misperceptions and crisis escalation, including** up to the **use of nuclear weapons**. U**.S. policy and strategy should seek a balance between traditional military approaches to protecting its space assets and diplomatic tools to create a more secure space environment.** I. INTRODUCTION Outer space is recognized by all nations as “the province of mankind” not subject to national boundaries or appropriation via both treaty – especially the 1967 Outer Space Treaty1 – and by the practice of nation states. Since the dawn of the space age, the use of satellites has become integral to the global economy, including providing communications, weather services, mapping, precision timing and navigation services for shipping, secure crossborder banking, and Internet connectivity. Every state has both an interest in making use of space, and reason to deal with its use by other states, because **the activities in space by one actor have the potential to impact all others**, for good or for bad. In addressing international and national security, and nuclear security in particular, the space environment has played a role of great importance from almost the beginning of the nuclear age. The first satellites launched by the Soviet Union and the United States were oriented toward seeking information on what was transpiring in areas controlled by the other, and to verify bilateral arms control agreements. While in short order space systems also were integrated to the offensive uses of long-range delivery systems by providing photographic information about potential targets, strategic space systems were during the Cold War widely viewed as stabilizing the Superpower nuclear competition. The use of space for military purposes has continued into the present era, with increasing capabilities to take advantage of large segments of the electromagnetic spectrum for acquiring intelligence, communicating globally, and generally supporting ways of using nuclear weapons both for deterrence, and, should deterrence fail, use of those weapons against an adversary. Most of the nuclear weapon possessing states operate satellites for these purposes. Perhaps as importantly, space systems over the last two decades have become integral to the tactical warfighting ability of many modern states – a situation that has complicated the status of space systems as strategically stabilizing. Indeed, the growing use of space by many countries to achieve victory on the battlefield has increased both the vulnerability of militaries to attacks on their space systems and has, at the same time, increased their value as potential targets in a war. Over the past 50 years, the Soviet Union, the United States, and China have carried out experiments in or aimed at the outer space environment – mostly the area close to the atmosphere in Low Earth Orbit (LEO) – that show the capability to destroy a satellite, or to disrupt its functions. The specter of space warfare for many years has, among other negative consequences, raised concerns that a state’s nuclear retaliatory capability could be compromised. This concern also applies more generally, of course, to an ability to disrupt communications functions for other military, or civilian, purposes. In the 1980s, there was a period when the United States, and perhaps others, explored whether systems based in space could be used to destroy an adversary’s intercontinental ballistic missiles, or their payloads. The so-called Star Wars program under the Reagan Administration envisioned the deployment of a system of satellites that would seek to destroy the missiles/warheads launched at the United States. One technology explored envisioned detonating a nuclear explosive to generate a beam of x-rays that would put out of commission the adversary’s warhead. Thus far, such technologies have not succeeded in playing a role in the nuclear-weapon situation globally. However, the U.S. descendant of the Star Wars program – currently limited to conventionally equipped, ground- and sea-based missile defense interceptors with limited capability against a full-blown nuclear attack – continues to stress nuclear deterrence and stability between the United States and Russia, as well as China, which maintains a much smaller nuclear arsenal than the Cold War adversaries. However, recent missile experiments by China have demonstrated the vulnerability of the geosynchronous equatorial orbit (GEO), where many hundreds of satellites are “parked” carrying out communications and other functions, including nuclear weapons support systems and spy satellites. II. INCREASED THREATS INVOLVING OUTER SPACE Since the first satellites were launched in the 1950s by the Soviet Union and then the United States, the Russian Federation, the United States, China, India, Japan, and other states have, without much coordination, launched so many satellites into space into various orbits and at various altitudes that there is currently a strong risk of both congestion and competition. There is no global regime for regulating outer space activities. The Outer Space Treaty of 1967, to which all the launching states, and most others, are party2 mandates that outer space be used solely for peaceful purposes, and prohibits the stationing of nuclear or other weapons of mass destruction in that environment. (The Treaty does not prohibit the transit of nuclear weapons, e.g. as a payload on a submarine-launched ballistic missile, through outer space; furthermore under common law practice, defensive military activities are tolerated as compliant with “peaceful purposes.”) The Outer Space Treaty, however, makes it clear that states are responsible for their own space activities, and compliance with international law. And while there are a number of other spacerelated treaties, UN principles and voluntary agreements managed by various UN and multilateral bodies, a nation’s activities in space are largely regulated by that nation alone. There is no international legal requirement for any one state to coordinate its satellite launches or maneuvers with others. Environmental Threats: Crowding and Debris Some 1,500 operational satellites are now in orbit, owned by more than 80 states or other entities. These states and entities have varying levels both of proficiency and of knowledge of the established laws and rules affecting space. In the radio frequency band of the electromagnetic spectrum, interference is rising, especially in the GEO regime. Some of this interference is deliberate, undertaken for political purposes, despite the fact that deliberate interference is one of the few legally binding restraints in the international space arena3 . The evolution in satellite technology has led to the wider use of smaller satellites, including so-called “Cubesats,” that can be deployed in constellations, especially in LEO. The number of operational satellites is expected to rise to many thousands within the decade. LEO, in particular, is becoming incredibly crowded with satellites, making tracking of on-orbit objects extremely difficult. Furthermore, many small satellites have no ability to maneuver to avoid collisions with other satellites and space debris. The half-century of using space has resulted, from the breakup of satellites and other activities, in a considerable amount of on-orbit debris – including satellites no longer in use, parts of satellites that have broken up, launcher stages, nuts and bolts, and debris from the deliberate destruction of satellites. The United States and others track some 23,000 orbiting pieces with a diameter of greater than 10 cm. This debris is especially dangerous if a satellite or transiting vehicle collides with a piece, since the closing velocity of such a collision on-orbit is very high – some 7.5 kilometers per second (faster than a bullet) in LEO. Worse yet, even very small debris, most of which cannot be detected much less tracked, can destroy an operational satellite; it is estimated that some 500,000 to one million pieces of debris smaller than 10 centimeters exist on orbit. **It is widely agreed that new international measures to better coordinate space activities are required to ensure that the space environment is sustained**. In 2007, the United Nations Committee for the Peaceful Uses of Outer Space (COPUOS) in Vienna, Austria, agreed on a set of guidelines for the mitigation of space debris, which are slowly being implemented by many space-faring states. It may be that such measures will eventually require removal of debris from orbit, as the decay of debris from space into the atmosphere where it burns up (or falls on Earth) is a very long-term prospect, taking as much as 25 years in LEO. Sadly, the lifetime of debris in GEO, like diamonds, is practically forever. COPUOS currently is working on a set of recommended best practices to ensure the “long-term sustainability of space.” COPUOS has a 2018 deadline to finish this work; however, there is already discussion of follow-on effort that may include international guidelines for debris removal. Increasing Military Tensions in Space In the geopolitical sphere, compared with the period following the breakup of the Soviet Union, the current decade is witnessing increased tensions between the United States and Russia, and between the United States and China. The geopolitical situation in space has been further eroded by the proliferation of experimentation with and/or deployment of dual-use technologies with “counterspace,” i.e. satellite attack, capabilities. As noted above, China, Russia and the United States all have tested (or in some cases deployed) such technologies in both LEO and GEO. The United States continues to have an advantage in military space capabilities, but its edge is eroding as China and Russia dedicate more resources. Most technologies involved in sustaining systems in orbit are dual-use, but certain specific activities are raising suspicions about potential intended weapons use. The capability to maneuver satellites is particularly relevant. Russia placed a satellite called Luch/Olymp in GEO that maneuvered or drifted over a considerable range, and at several points in 2015 came extremely close to commercial satellites owned by Intelsat.4 Intelsat called the move “irresponsible,” but their request for information from Russia went unanswered. The maneuvers further prompted concern at the U.S. Defense Department about the satellite’s mission, which has not been revealed by Moscow. The United States also has carried out programs in GEO that could have potential weapons capabilities. For example, the PAN, an acronym for Palladium at Night, is a classified program apparently dealing with communications platforms, and perhaps providing other capabilities.5 The Geosynchronous Space Situational Awareness Program (GSSAP) is a U.S. military satellite constellation that also maneuvers in orbit, designed, according to the Pentagon, with the objective of inspecting other satellites orbiting in GEO. Such activities are known as Rendezvous and Proximity Operations (RPO), and have a number of benign applications such as satellite refueling, inspection and repair. Russia is carrying out other such experiments in LEO, as are China, the United States, Japan and Sweden. The commercial applications of maneuvering satellites are also increasing. Among the number of more directly identifiable counterspace technologies now available, the most widespread are ground-based radio-frequency jammers, which can be used to disrupt satellite communications and operations. In addition, there are efforts to develop lasers for disrupting or degrading systems based in space. Russia, China and the United States have also carried out projects involving terrestrially based missiles carrying anti-satellite payloads. The United States as early as the 1980s launched missiles from an F-15 fighter jet with this objective. A 2007 Chinese test, involving the destruction of a non-functional Chinese weather satellite in LEO, released a considerable quantity of debris. The United States subsequently launched a missile from an Aegis cruiser that was advertised to have the objective of destroying a satellite in a decaying orbit, but this did not prevent speculation that the mission also had the objective of demonstrating a similar capability to that of China. Over decades, the U.S. missile defense program has also heavily relied on the space environment, for early warning, for communications, and as a place for engaging and destroying hostile systems. Noted above is the Reagan Administration’s “Star Wars” program, pursued with the idea of creating a “shield” against intercontinental ballistic missiles. **The harder-line rhetoric that has been employed in recent years also has had an inevitable impact of raising tensions**. The United States has pivoted from an approach of “strategic restraint” to one emphasizing “warfighting.”6 In particular, the budgets for providing resiliency in space systems and counterspace capabilities have been increasing. At the same time, Russian accusations that U.S. activities have a hostile objective, and its responses to U.S. representations, have become shriller. Russia has called the anti-ballistic missile system SM-3 2A an anti-satellite weapon, while touting its own objectives for acquiring anti-satellite capabilities. In 2013, China tested a missile, the Dong Ning-2, which appears capable of reaching satellites in GEO. Chinese military space activities lack transparency, but it seems clear that such activities include the objective of being able to exercise counterspace actions. Most troubling, there has been a lack of serious dialogue among these Big Three states. Multilateral Efforts to Reduce Risks For many years, a direct approach to concerns about the potential for weaponizing space (space has been militarized since the dawn of the space age, but so far cannot be said to have been weaponized) has been debated within the United Nations, as well as at the Conference on Disarmament in Geneva. The Russian-Chinese cosponsored initiative, on the Prevention of an Arms Race in Outer Space, has been on the agenda of the Conference on Disarmament since 1985, and under that agenda item Moscow and Beijing have proposed a treaty to ban weapons in space.7 However, the Conference has been all but immobilized by wider disagreements since that time; and the United States remains firmly opposed to the proposed treaty. There have been a number of efforts to set norms of behavior in space in order to guard against misunderstanding and conflict in space. Most recently, the 2013 UN Group of Governmental Experts (GGE) on Transparency and Confidence-Building Measures in Outer Space Activities released a set of recommended initiatives for states to implement, including improved communications about objects in orbit.8 Unfortunately, little work has been done since to implement the recommendations, either at the multilateral level or by individual states. However, the United States, Russia and China have recommended that the UN Disarmament Commission, based in New York, and the deliberative body on arms control issues, take up the question of implementation of the GGE recommendations. While the initial proposal has been received favorably, a decision regarding whether to put the issue on the Commission’s formal agenda will not be made until Fall. III. POLICY QUESTIONS FOR THE UNITED STATES In view of the increased uncertainties affecting the use of outer space, particularly in the area of international security, the United States needs to address several issues with some urgency. First, what is the appropriate mix of resiliency measures to apply in the coming years? A subsidiary question in this regard is what is an appropriate role for commercial providers? And should the U.S. military switch to constellations of small satellites for some national security missions? The budgetary implications of achieving objectives, and establishing appropriate requirements, are important components of pursuing this mix. And there is the inevitable bureaucratic overlap between the Department of Defense and the Intelligence Community. Such “turf” issues require constant attention lest they adversely impact on the fulfillment of national, vice institutional, objectives. Lengthy acquisition programs put systems at risk of becoming obsolescent earlier than they would otherwise become outdated. As part of this latter issue, the United States will need to consider what reforms are needed in the acquisition process, and related organizational arrangements. The integration of Department of Defense and Intelligence Community programs and activities is inevitably a delicate matter; it will require especial focus from the White House, in particular as resiliency is now being embedded into the requirements for acquisition of new systems. A more far reaching issue is how best to strike a balance between the defensive aspects of counterspace and the offensive aspects. And integral to addressing this balance is the impact of U.S. options to respond to hostile space activities on the stability of the strategic/nuclear relationships: U.S.-Russia, U.S.-China, and a large number of other such relationships involving the nuclear-weapon-possessing states. If “arms racing” resumes, or, in the case of India and Pakistan, continues, how will the use of space, specifically for counterspace activities, impact on these races, and vice-versa? Will there be a deterioration in nuclear deterrence? Will an offensive strategy involving the targeting of an adversary’s nuclear-related satellites emerge? These are questions that beg answers in the near-term, as budgetary and policy decisions are being made. **It is also important to consider the role of diplomacy in dealing with international security for outer space.** Diplomacy, in the form of both self-restraint and in reassurance of potential adversaries regarding intentions, has been a part of the tool kit for managing competition in space from the beginning of the space age. Can effective “rules of the road” be further developed? The limited success, but slow pace, of multilateral efforts should not be seen as failure, however. Diplomacy is a difficult business, often characterized by a “one step forward, one step back” dynamic. There is some optimism to be found in the ongoing COPUOS effort, which while a slightly sideways approach, will have positive impacts on international security if successful. While the Disarmament Commission has little power, the advent of discussions there would provide a much needed multilateral forum for addressing the security issues for space given the decades-long impasse at the Conference on Disarmament. Finally, **one should not overlook the value of bilateral diplomacy, particularly among the Big Three space powers. Further work will also be needed to regulate the proliferation of technologies in the commercial sector**. This will likely involve export control, and measures for the management of “traffic” in space (STM). However, care must be given to weigh national security concerns against the needs of commercial industry to thrive in the international marketplace. There is a tendency in the national security community to try to “close the barn door after the horses have escaped” that must not be indulged in the space domain, given the reliance of the national security sector on commercial capabilities and technological innovation. IV. THE NEED FOR A “TIME OUT” To date, no state is deploying dedicated anti-satellite weapons. Testing of capabilities does not a program make. That said, the trend lines are currently negative and require both time and analysis to mitigate. It would be irresponsible for the United States, or any other country, to leap to conclusions about the “inevitability” of all-out war in space. A balanced strategy, which combines resiliency, deterrence, and diplomacy **will be required to** protect national security and **ensure international security**. While development of some anti-satellite capabilities for potential future use may be wise, a run-away space arms race is not desirable for any party. It may be that a viable modus vivendi could be a situation of “implied deterrence:” i.e., the development of dual-use technologies with inherent weapons capabilities in a transparent manner so as to provide the knowledge to others that, if pushed, antisatellite weapons could be deployed. And despite the difficulties to date, **the prospect of the multilateral establishment of norms shows some possibility of promise.** This involves the implementation of recommendations by the Group of Governmental Experts discussed above; of the COPUOS LTS (long-term sustainability) best practices work making progress by 2018; the successful efforts to codify the legal regime that are underway (e.g., those at McGill University in Montreal), and perhaps the UN Disarmament Commission addressing TCBMs in 2018. These efforts must be given a chance to ripen, however much frustration is involved in the processes. It can perhaps be helpful to think of the world as being surrounded on all sides by a large fishbowl, of indefinite dimensions in the outward direction, with the atmosphere at the intersection between “outer” space and the land and waters below. Looked at in this way, human activities in outer space have little room to be confined to a single state: the world as a whole is impacted by those activities. Accordingly, when dealing with outer space, traditional concepts of absolute roles for state sovereignty must inevitably be modified to serve the objectives of global peace, security and stability. Whether this reality will at some point lead to an appreciation that reliance on force, nuclear weapons in particular, cannot play the role in space that it does on the Earth, remains to be seen.

#### Solves all extinction scenarios.

Baum 09 – (2009, Seth, visiting scholar at Columbia University's Center for Research on Environmental Decisions, PhD candidate in Geography with a focus on risk analysis, “Cost–benefit analysis of space exploration: Some ethical considerations,” Space Policy Volume 25, Issue 2, May 2009, Pages 75-80, science direct Ajones)

Another non-market benefit of space exploration is reduction in the risk of the extinction of humanity and other Earth-originating life. Without space colonization, the survival of humanity and other Earth-originating life becomes extremely difficult- perhaps impossible- over the very long-term. This is because the Sun, like all stars, changes in its composition and radiative output over time. The Sun is gradually converting hydrogen into helium, thereby getting warmer. In approximately 500 million to one billion years, this warming is projected to render Earth uninhabitable to life as we know it [25–26]. Humanity, if it still exists on Earth then, could conceivably develop technology by then to survive on Earth despite these radical conditions. Such technology may descend from present proposals to “geoengineer” the planet in response to anthropogenic climate change [27–28].3 However, the Sun later- approximately seven billion years later- loses mass that spreads into Earth’s orbit, causing Earth to slow, be pulled into the Sun, and evaporate. The only way life could survive on Earth may be if Earth, by sheer coincidence (the odds are on the order of one in 105 to one in 106 [29]) happens to be pulled out of the solar system by a star system that passes by. This process might enable life to survive on Earth much longer, although the chance of this is quite remote. While space colonization would provide a hedge against these very long-term astrological threats, it would also provide a hedge against the more immediate threats that face humanity and other species. These threats include nuclear warfare, pandemics, anthropogenic climate change, and disruptive technology [30]. Because these threats would generally only affect life on Earth and not life elsewhere,4 self-sufficient space colonies would survive these catastrophes, enabling life to persist in the universe. For this reason, space colonization has been advocated as a means of ensuring long-term human survival [32–33]. Space exploration projects can help increase the probability of long-term human survival in other ways as well: technology developed for space exploration is central to proposals to avoid threats from large comet and asteroid impacts [34–35]. However, given the goal of increasing the probability of long-term human survival by a certain amount, there may be more cost-effective options than space colonization (with costs defined in terms of money, effort, or related measures). More cost-effective options may include isolated refuges on Earth to help humans survive a catastrophe [36] and materials to assist survivors, such as a how-to manual for civilization [37] or a seed bank [38]. Further analysis is necessary to determine the most cost-effective means of increasing the probability of long-term human survival.

#### Space exploration is k2 ending climate change

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Space developments in the last two decades have greatly contributed to our understanding of our planet’s climate. Satellite imaging, space exploration, and new technologies give us an idea of the big picture and how we can adapt to address climate change. For example, satellites in space have played a critical role in our understanding of the causes of global warming by providing us with a large body of data to examine the variations in the Earth’s orbit. Data from these capabilities were essential inputs into the Intergovernmental Panel on Climate Change’s (IPCC) recent report that focused on how the physical science of climate change informs likely impacts under five different emissions scenarios. The report also found that climate change is happening quicker than we thought, making the need to reduce emissions imminent. To address this, space infrastructure such as positioning, navigation, and timing (PNT) can help identify efficient transportation routes and sources of emissions, ultimately aiding mitigation efforts.