## 1

#### Xi is tightening control over the PLA but completing goals are critical.

Krishnan 21 – Ananth, 11/18/21, [‘Xi tightened control over the PLA’, TheHindu, <https://www.thehindu.com/news/international/xi-tightened-control-over-the-pla/article37549460.ece>] Justin

The new resolution on history passed last week by China’s ruling Communist Party has said that President Xi Jinping had tightened control over the military to address the party’s “obviously lacking” leadership of the armed forces under his predecessors.

The full text of the resolution, released on Tuesday evening, listed some of the actions taken by the People’s Liberation Army (PLA) under Mr. Xi, who is also the chairman of the Central Military Commission. These included what the document described as “major operations related to border defence”.

No specifics

It did not specify what those major operations were. China has unresolved land borders with India and Bhutan. In April 2020, the PLA mobilised two divisions and carried out multiple transgressions across the Line of Actual Control (LAC) in Eastern Ladakh, sparking the worst crisis along the border in many years. Talks to resolve the tensions are still on-going.

“The armed forces have remained committed to carrying out military struggles in a flexible manner to counter military provocations by external forces, and they have created a strong deterrent against separatist activities seeking ‘Taiwan independence,’” the resolution said.

“They have conducted major operations related to border defence, protecting China’s maritime rights, countering terrorism and maintaining stability, disaster rescue and relief, fighting COVID-19, peacekeeping and escort services, humanitarian assistance, and international military cooperation.”

Last week’s resolution on history was only third such document putting forth the official view on party history, following resolutions passed by Mao Zedong in 1945 and Deng Xiaoping in 1981.

The new resolution dealt more with the future than the past. It essentially reaffirmed the official view on history, saying that the “basic points and conclusions” of past resolutions “remain valid to this day.”

It repeated the conclusion reached in 1981 on Mao’s errors noting that “mistakes were made” and that “Mao Zedong’s theoretical and practical errors concerning class struggle in a socialist society became increasingly serious” leading to the disasters of the Cultural Revolution.

Criticism of predecessors

Much of the new resolution focuses on emphasising Mr. Xi’s leadership and calling for the party to support his “core” status. It only briefly mentioned Mr. Xi’s predecessors Jiang Zemin and Hu Jintao, and implicitly critcised some aspects of their leadership including on military matters.

“For a period of time, the party’s leadership over the military was obviously lacking,” it noted. “If this problem had not been completely solved, it would not only have diminished the military’s combat capacity, but also undermined the key political principle that the party commands the gun.”

The document said Mr. Xi’s leadership had tightened supervision on the military including boosting “troop training and battle preparedness”, and it repeated China’s stated goals of completing the modernisation of its armed forces by 2035 and building a “world class” military by 2050, which observers see as meaning on par with the U.S.

‘Working vigorously’

“To build strong people’s armed forces, it is of paramount importance to uphold the fundamental principle and system of absolute party leadership over the military, to ensure that supreme leadership and command authority rest with the party Central Committee and the Central Military Commission (CMC), and to fully enforce the system of the CMC chairman assuming overall responsibility,” the resolution said, adding that “setting their sights on this problem, the Central Committee and the CMC have worked vigorously to govern the military with strict discipline in every respect.”

#### The commercial space sector is one of the PLAs central goals – the plan is a 180.

Bartholomew & Cleveland 19 – Carolyn and Robin, 4/25/19, Chairmen and Vice Chairmen. Section is written from Michael A. McDevitt, US Congressperson, [“HEARING ON CHINA IN SPACE: A STRATEGIC COMPETITION?,” <https://www.uscc.gov/sites/default/files/transcripts/April%2025%2C%202019%20Hearing%20Transcript%20%282%29.pdf>] Justin

As the Chairman said, China is determined to become a leading space power, which requires continuing to boost its innovation capabilities, both in its civilian and military sectors. The People’s Liberation Army is closely involved in most if not every aspect of China’s space program, from helping formulate and execute national space goals to overseeing China’s human spaceflight program. Coverage of China’s space program must treat seriously the implications of the reality that in many cases the boundaries between the military and civil silos of China’s program are thin, if they exist at all.

Our second panel today will address the application of what China calls its “military-civil fusion” strategy to its space sector. Military-civil fusion, a strategic concept designed to harness civilian sector innovation to power China’s military and technological modernization with the goal of leapfrogging the United States and becoming a technological powerhouse. Space has been designated as an especially important sector for military-civil fusion, and the impacts of this campaign on China’s burgeoning commercial space sector—itself a recipient of generous government support and protection—will be crucial as Chinese companies increasingly seek to compete in the international marketplace. Military-civil fusion is especially worthy of attention due to its continued reliance on technology transfer, by hook or by crook, to fuel China’s industrial and military growth.

Our third and final panel today will examine China’s military space and counterspace activities. Since its direct-ascent kinetic antisatellite test in 2007, which was responsible for a large amount of all space debris currently in Earth’s orbit, China has continued to invest in a variety of offensive antisatellite capabilities. Indeed, China’s counterspace arsenal contains many options: earlier this month, Acting Secretary of Defense Patrick Shanahan said China “has exercised and continues to develop” jamming capabilities; is deploying directed-energy counterspace weapons; has deployed an operational ground-based antisatellite missile system; and is prepared to use cyberattacks against U.S. space systems.

#### Mining tech’s dual use – PLA does care

Deudney 20, Daniel. Dark skies: Space expansionism, planetary geopolitics, and the ends of humanity. Oxford University Press, USA, 2020.

Four technologies are so important for all ambitious space expansionist schemes that they can be considered building blocks: cheaper access to orbit, asteroid orbital alteration, mining and processing space materials in space, and thermonuclear fusion (see Table 4.1). If any one of these possible-in-principle technologies remains impractical to develop, major parts of the expansionist program will be technologically infeasible.

Table

Description automatically generated

Propulsion technology to get to space, and around in space, is the most basic technology for space expansion. !e use of rockets to propel objects is now routine, but costs remain high, around ten thousand dollars per pound. Lowering costs by several orders of magnitude is widely seen as vital to more ambitious space activities.36 Current rockets are essentially lineal descendants of the "rst rockets, because used only once, and propelled by burning liquid chemicals, with the combination of cryogenically cooled liquid hydrogen and oxygen being the most e#cient. As many note, commercial aviation would also be prohibitively expensive if airplanes were not reused repeatedly. But this comparison, while capturing a basic di$erence between contemporary aeronautics and astronautics, fails to acknowledge that space launchers must accelerate to velocities some thirty-four times faster than airliners and withstand extreme reentry temperatures. Much e$ort has gone to developing reusable spaceships, but the results have been disappointing. !e most ambitious e$ort, the American space shu%le program, &ew 133 successful &ights between 1981 and 2011, but design &aws caused the destruction of two of the "ve orbiters. It was projected to reduce orbital access costs by an order of magnitude but was never able to achieve any cost reductions because of the extensive maintenance required to ready the shu%les for &ight. Recent e$orts by Space X and other corporations to develop reusable rockets have rekindled hopes for signi"cant cost reductions, but it remains uncertain how many &ights, with what levels of reliability, and with what refurbishment costs these new systems can provide. Achieving multiple-ordersof-magnitude cost reductions probably depends upon developing substantially lighter and stronger materials.37 A truly wild-card transport possibility, the “space elevator,” could, if feasible, probably greatly lower costs, thus enabling many large-scale space activities.38 !e space elevator is simple in its basic outline, a cable stretching roughly sixtytwo thousand miles between the Earth’s surface and a large orbiting counterweight. Once built, substantial payloads could be hoisted up the cable, like elevators in skyscrapers, at costs of pennies per pound. A fundamental barrier to construction is that the cable must be nearly two-hundred times as strong as steel. Amazingly, researchers have discovered forms of carbon possessing such extraordinary strengths, but it remains unknown whether strands of this material can be expanded to lengths of thousands of miles. A space elevator would also have to be con"gured to withstand lightning strikes and severe storms and would catastrophically fail if the cable broke anywhere along its enormous length. However, should such wonders be possible, they might be constructed throughout the solar system. For propelling objects through space on any signi"cant scale, chemical rockets are inadequate, but a wide array of technological alternatives promise vastly greater e)ciencies: ion drives, solar sails, lasers, and even nuclear explosives. For long-duration robotic space probes, nuclear energy is already widely used, and preliminary tests of other novel propulsion technologies have been conducted. Fusion reactors and propulsion are also extremely a+ractive in principle. Development of these alternatives is likely to remain rudimentary until demand for their services expands considerably, but it is reasonable to anticipate that one or several of these dark horse candidates for solar system transportation at reasonable costs will eventually be available. ,e second building-block technology, altering asteroid orbits, is vital for preventing collisions with Earth and acquiring materials for building large-scale infrastructures. ,is has been o-en studied but never a+empted, re.ecting low priorities, not intrinsic di)culty. ,ere is wide agreement that altering asteroid orbits faces no really fundamental technological feasibility problems. ,e /rst study, by a group of MIT engineering students in 1968, analyzed the use of hydrogen bombs launched by multiple Saturn V Apollo Program rockets to alter the orbital path of Icarus, a twenty-two-mile-long NEO.39 ,e energy required for de.ection varies with their mass and the point in their orbits when energy is applied, with the easiest at the apogee, the point when they are furthest from the object they are orbiting. De.ection technology has received steadily more a+ention from researchers as the history of asteroidal collisions has come to light. ,e assumption that nuclear explosions are most suitable has waned with the realization that their brute force could fragment a body. Researchers have proposed a variety of nonnuclear techniques, all of which work slowly, increasing the importance of extended warning times.40 One idea, the “gravity tractor,” envisions positioning a spacecra- near the asteroid and then burning its engines slowly over an extended period of time, which would slowly pull both the asteroid and the spacecra- in a desired direction. Many asteroids are wildly spinning and tumbling and would need to be stabilized before gradual de.ection techniques could be used. While many techniques appear viable in principle, actually a+empting them could encounter unexpected problems and require lengthy trials and errors.

Third, technologies to process materials from the moon and asteroids into structures are vital for space expansion. Initial explorations have revealed a wide array of metals and resources, albeit in very di0erent forms and concentrations than in the terrestrial lithosphere.41 Unlike ores found on Earth, the metals in metallic asteroids are not combined in various oxide and salt compounds, making their conversion into useful objects signi/cantly easier. ,e organic materials in carbonaceous asteroids, and the water, carbon dioxide, methane, and ammonia in comets, could provide the raw materials necessary to support life.42 While copious quantities of raw materials are available, no space material has yet been processed in space. Terrestrial industrial processes for mining and fabricating materials are mature technologies, providing the basis for processing in space. But di!erences in the raw materials themselves and the need to operate in a vacuum and in nearly weightless conditions are likely to limit the direct transfer of established terrestrial material processes. Learning to do in space what is routinely done on Earth will require investment in very basic material-processing technologies, requiring unknown amounts of e!ort, time, and money to accomplish. But because there are no winds or rain in the vacuum of space, structures might be made of much lighter and thinner materials, such as gossamer-thin re"ective #lms that would quickly disintegrate in a turbulent atmosphere. And because objects are weightless they can be vastly larger than on Earth, perhaps many miles in size. But how such materials will weather harsh radiation and periodic solar storms and how long they will last are now unknowable but pivotal to their economic prospects

#### That triggers backlash – they don’t support restrictions on the space sector and will do everything to convince leaders not to do the plan.

Cheng 14 [Dean Cheng, Senior Research Fellow in the Asia Studies Center at the Heritage Foundation, Former Senior Analyst at the China Studies Division of the Center for Naval Analyses, Former Senior Analyst with Science Applications International Corporation, “Prospects for U.S.-China Space Cooperation”, Testimony before the Committee on Commerce, Science, and Transportation, United States Senate, 4/9/2014, https://www.heritage.org/testimony/prospects-us-china-space-cooperation]

At the same time, space is now a sector that enjoys significant political support within the Chinese political system. Based on their writings, the PLA is clearly intent upon developing the ability to establish “space dominance,” in order to fight and win “local wars under informationized conditions.”[8] The two SOEs are seen as key parts of the larger military-industrial complex, providing the opportunities to expose a large workforce to such areas as systems engineering and systems integration. It is no accident that China’s commercial airliner development effort tapped the top leadership of China’s aerospace corporations for managerial and design talent.[9] From a bureaucratic perspective, this is a powerful lobby, intent on preserving its interests. China’s space efforts should therefore be seen as political, as much as military or economic, statements, directed at both domestic and foreign audiences. Insofar as the PRC has scored major achievements in space, these reflect positively on both China’s growing power and respect (internationally) and the CCP’s legitimacy (internally). Efforts at inducing Chinese cooperation in space, then, are likely to be viewed in terms of whether they promote one or both objectives. As China has progressed to the point of being the world’s second-largest economy (in gross domestic product terms), it becomes less clear as to why China would necessarily want to cooperate with other countries on anything other than its own terms. Prospects for Cooperation Within this context, then, the prospects for meaningful cooperation with the PRC in the area of space would seem to be extremely limited. China’s past experience of major high-technology cooperative ventures (Sino–Soviet cooperation in the 1950s, U.S.–China cooperation in the 1980s until Tiananmen, and Sino–European space cooperation on the Galileo satellite program) is an unhappy one, at best. The failure of the joint Russian–Chinese Phobos–Grunt mission is likely seen in Beijing as further evidence that a “go-it-alone” approach is preferable. Nor is it clear that, bureaucratically, there is significant interest from key players such as the PLA or the military industrial complex in expanding cooperation.[10] Moreover, as long as China’s economy continues to expand, and the top political leadership values space efforts, there is little prospect of a reduction in space expenditures—making international cooperation far less urgent for the PRC than most other spacefaring states. [FOOTNOTE] [10]It is worth noting here that the Chinese Ministry of Foreign Affairs is not a part of the CCP Politburo, a key power center in China. Thus, the voice of the Ministry of Foreign Affairs is muted, at best, in any internal debate on policy. [END FOOTNOTE] If there is likely to be limited enthusiasm for cooperation in Chinese circles, there should also be skepticism in American ones. China’s space program is arguably one of the most opaque in the world. Even such basic data as China’s annual space expenditures is lacking—with little prospect of Beijing being forthcoming. As important, China’s decision-making processes are little understood, especially in the context of space. Seven years after the Chinese anti-satellite (ASAT) test, exactly which organizations were party to that decision, and why it was undertaken, remains unclear. Consequently, any effort at cooperation would raise questions about the identity of the partners and ultimate beneficiaries—with a real likelihood that the PLA would be one of them.

#### An unhinged PLA triggers Himalayan war – goes global

Chellaney 17 [Dr. Brahma Chellaney, Professor of Strategic Studies at the Center for Policy Research and Fellow at the Robert Bosch Academy, PhD in International Studies from Jawaharlal Nehru University, “Why the Chinese Military’s Rising Clout Troubles Xi Jinping”, The National, 9/9/2017, https://www.thenational.ae/opinion/why-the-chinese-military-s-rising-clout-troubles-xi-jinping-1.626815?videoId=5754807360001]

China’s president Xi Jinping has stepped up his domestic political moves in the run-up to the critical 19th national congress of the Chinese Communist Party next month, but he is still struggling to keep the People’s Liberation Army (PLA) in line. China’s political system makes it hard to get a clear picture, yet Mr Xi’s actions underscore the troublesome civil-military relations in the country. Take the recent standoff with India that raised the spectre of a Himalayan war, with China threatening reprisals if New Delhi did not unconditionally withdraw its forces from a small Bhutanese plateau, which Beijing claims is Chinese territory. After 10 weeks, the face-off on the Doklam Plateau ended with both sides pulling back troops and equipment from the site on the same day, signalling that Beijing, not New Delhi, had blinked. The mutual-withdrawal deal was struck just after Mr Xi replaced the chief of the PLA’s joint staff department. This key position, equivalent to the chairman of the US joint chiefs of staff, was created only last year as part of Mr Xi’s military reforms to turn the PLA into a force “able to fight and win wars”. The Doklam pullback suggests that the removed chief, Gen Fang Fenghui, who has since been detained for alleged corruption, was an obstacle to clinching a deal with India. To be sure, this was not the first time that the PLA’s belligerent actions in the Himalayas imposed diplomatic costs on China. A classic case happened when Mr Xi reached India on a state visit in September 2014. He arrived on Indian prime minister Narendra Modi’s birthday with a strange gift for his host, a predawn Chinese military encroachment deep into India’s northern region of Ladakh. The encroachment, the worst in many years in terms of the number of intruding troops, overshadowed Mr Xi’s visit. It appeared bizarre that the military of an important power would seek to mar the visit of its own head of state to a key neighbouring country. Yet Chinese premier Li Keqiang’s earlier visit to New Delhi in 2013 was similarly preceded by a PLA incursion into another part of Ladakh that lasted three weeks. Such provocations might suggest that they are intentional, with the Chinese government in the know, thus reflecting a preference for blending soft and hard tactics. But it is also possible that these actions underscore the continuing “disconnect between the military and the civilian leadership” in China that then US defence secretary Robert Gates warned about in 2011. During his 2014 India trip, Mr Xi appeared embarrassed by the accompanying PLA encroachment and assured Mr Modi that he would sort it out upon his return. Soon after he returned, the Chinese defence ministry quoted Mr Xi as telling a closed-door meeting with PLA commanders that “all PLA forces should follow the president’s instructions” and that the military must display “absolute loyalty and firm faith in the party”. Recently Xi conveyed that same message yet again when he addressed a parade marking the 90th anniversary of the PLA’s creation on August 1, 1927. Donning military fatigues, Mr Xi exhorted members of his 2.3-million-strong armed forces to “unswervingly follow the absolute leadership of the party.” Had civilian control of the PLA been working well, would Mr Xi repeatedly be demanding “absolute loyalty” from the military or asking it to “follow his instructions”? China does not have a national army; rather the party has an army. So the PLA has traditionally sworn fealty to the party, not the nation. Under Mr Xi’s two immediate predecessors, Hu Jintao and Jiang Zemin, the PLA gradually became stronger at the expense of the party. The military’s rising clout has troubled Mr Xi because it hampers his larger ambition. As part of his effort to reassert party control over the military, Mr Xi has used his anti-corruption campaign to ensnare a number of top PLA officers. He has also cut the size of the ground force and established a new command-and-control structure. But just as a dog’s tail cannot be straightened, asserting full civil control over a politically ascendant PLA is proving unachievable. After all, the party depends on the PLA to ensure domestic order and sustain its own political monopoly. The regime’s legitimacy increasingly relies on an appeal to nationalism. But the PLA, with its soaring budgets and expanding role to safeguard China’s overseas interests, sees itself as the ultimate arbiter of nationalism. To make matters worse, Mr Xi has made many enemies at home in his effort to concentrate power in himself, including through corruption purges. It is not known whether the PLA’s upper echelon respects him to the extent to be fully guided by his instructions. In the past decade, the PLA’s increasing clout has led China to stake out a more muscular role. This includes resurrecting territorial and maritime disputes, asserting new sovereignty claims, and using construction activity to change the status quo. China’s cut-throat internal politics and troubled civil-military relations clearly have a bearing on its external policy. The risks of China’s rise as a praetorian state are real and carry major implications for international security.

#### Extinction.

Caldicott 17 – Helen, 2017, Founder of Physicians for Social Responsibility [“The new nuclear danger: George W. Bush's military-industrial complex,” The New Press]//Elmer

The use of Pakistani nuclear weapons could trigger a chain reac­tion. **Nuclear-armed India, an ancient enemy, could respond** in kind. China, India's hated foe, could react if India used her nuclear weapons, triggering a nuclear [war] ~~holocaust~~ on the subcontinent. If any of either **Russia** or **America**'s 2,250 strategic weapons on hair-trigger alert were launched either **accidentally** or **purposefully** in response, **nuclear winter** would ensue, meaning the **end of most life on earth**.

## 2

#### CP: Space faring nations should establish a multilateral agreement that bans asteroid redirection mining projects and bans the weaponization of outer space.

#### Solves for all of their asteroid mining debris scenarios. Strake reads yellow:

Sarah Scoles 15, “Dust from asteroid mining spells danger for satellites,” New Scientist, 5-27-2015, https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/

NASA chose the second option for its Asteroid Redirect Mission, which aims to pluck a boulder from an asteroid’s surface and relocate it to a stable orbit around the moon. But an asteroid’s gravity is so weak that it’s not hard for surface particles to escape into space. Now a new model warns that debris shed by such transplanted rocks could intrude where many defence and communication satellites live – in geosynchronous orbit. According to Casey Handmer of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit 63 times on average. A satellite in the wrong spot at the wrong time will suffer a damaging high-speed collision with that dust. The study also looks at the “catastrophic disruption” of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent (arxiv.org/abs/1505.03800). That may not have immediate consequences. But as Earth orbits get more crowded with spent rocket stages and satellites, we will have to worry about cascades of collisions like the one depicted in the movie Gravity. Handmer and Roa want to point out the problem now so that we can find a solution before any satellites get dinged. “It is possible to quantify and manage the risk,” says Handmer. “A few basic precautions will prevent harm due to stray asteroid material.”

## 3

#### Interpretation—the aff may not defend a subset of appropriation.

#### Appropriation is a generic indefinite singular. Cohen 01

Ariel Cohen (Ben-Gurion University of the Negev), “On the Generic Use of Indefinite Singulars,” Journal of Semantics 18:3, 2001 <https://core.ac.uk/download/pdf/188590876.pdf>

\*IS generic = Indefinite Singulars

French, then, expresses the two types of reading differently. In English, on¶ the other hand, generic BPs are ambiguous between inductivist and normative¶ readings. But even in English there is one type of generic that can express only¶ one of these readings, and this is the IS generic. While BPs are ambiguous¶ between the inductivist and the rules and regulations readings, ISs are not. In¶ the supermarket scenario discussed above, only (44.b) is true:¶ (44) a. A banana sells for $.49/lb.¶ b. A banana sells for $1.00/lb.¶ The normative force of the generic IS has been noted before. Burton-Roberts¶ (1977) considers the following minimal pair:¶ (45) a. Gentlemen open doors for ladies.¶ b. A gentleman opens doors for ladies.¶ He notes that (45.b), but not (45.a), expresses what he calls “moral necessity.”7¶ Burton-Roberts observes that if Emile does not as a rule open doors for ladies, his mother could utter [(45.b)] and thereby successfully imply that Emile was not, or was¶ not being, a gentleman. Notice that, if she were to utter. . . [(45.a)] she¶ might achieve the same effect (that of getting Emile to open doors for¶ ladies) but would do so by different means. . . For [(45.a)] merely makes a¶ generalisation about gentlemen (p. 188).¶ Sentence (45.b), then, unlike (45.a), does not have a reading where it makes¶ a generalization about gentlemen; it is, rather, a statement about some social¶ norm. It is true just in case this norm is in effect, i.e. it is a member of a set of¶ socially accepted rules and regulations.¶ An IS that, in the null context, cannot be read generically, may receive a¶ generic reading in a context that makes it clear that a rule or a regulation is¶ referred to. For example, Greenberg (1998) notes that, out of the blue, (46.a)¶ and (46.b) do not have a generic reading:¶ (46) a. A Norwegian student whose name ends with ‘s’ or ‘j’ wears green¶ thick socks.¶ b. A tall, left-handed, brown haired neurologist in Hadassa hospital¶ earns more than $50,000 a year.¶ However, Greenberg points out that in the context of (47.a) and (47.b),¶ respectively, the generic readings of the IS subject are quite natural:¶ (47) a. You know, there are very interesting traditions in Norway, concerning the connection between name, profession, and clothing. For¶ example, a Norwegian student. . .¶ b. The new Hadassa manager has some very funny paying criteria. For¶ example, a left-handed. . .¶ Even IS sentences that were claimed above to lack a generic reading, such¶ as (3.b) and (4.b), may, in the appropriate context, receive such a reading:¶ (48) a. Sire, please don’t send her to the axe. Remember, a king is generous!¶ b. How dare you build me such a room? Don’t you know a room is¶ square?

#### Their plan violates. Rules readings are always generalized – specific instances are not consistent. Cohen 01

Ariel Cohen (Ben-Gurion University of the Negev), “On the Generic Use of Indefinite Singulars,” Journal of Semantics 18:3, 2001 https://core.ac.uk/download/pdf/188590876.pdf

In general, as, again, already noted by Aristotle, rules and definitions are not relativized to particular individuals; it is rarely the case that a specific individual¶ forms part of the description of a general rule.¶ Even DPs of the form a certain X or a particular X, which usually receive¶ a wide scope interpretation, cannot, in general, receive such an interpretation in the context of a rule or a definition. This holds of definitions in general, not¶ only of definitions with an IS subject. The following examples from the Cobuild¶ dictionary illustrate this point:¶ (74) a. A fanatic is a person who is very enthusiastic about a particular¶ activity, sport, or way of life.¶ b. Something that is record-breaking is better than the previous¶ record for a particular performance or achievement.¶ c. When a computer outputs something it sorts and produces information as the result of a particular program or operation.¶ d. If something sheers in a particular direction, it suddenly changes¶ direction, for example to avoid hitting something.

#### That outweighs—only our evidence speaks to how indefinite singulars are interpreted in the context of normative statements like the resolution. This means throw out aff counter-interpretations that are purely descriptive

#### Vote neg:

#### 1] Precision –any deviation justifies the aff arbitrarily jettisoning words in the resolution at their whim which decks negative ground and preparation because the aff is no longer bounded by the resolution.

#### 2] Limits—specifying a type of appropriation offers huge explosion in the topic since space is, quite literally, infinite.

#### Drop the debater to preserve fairness and education – use competing interps –reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation

#### Hypothetical neg abuse doesn’t justify aff abuse, and theory checks cheaty CPs

#### No RVIs—it’s their burden to be topical.

## Case

### General

#### Extra-T: They cannot fiat the creation of a global scheme of space wealth redistribution. They can ban or restrict private appropriation of outer space, but they cannot say what to do with tax revenues generated from the scheme.

#### No solvency due to regulatory capture. Corporations already influence government to allow them to do outrageous things with global commons like mine and drill for oil. Nothing in their card, let alone inside their plan text, argues that space won't be the same.

#### Ambiguity ensures circumvention:

#### Russia cheats – gives an asymmetric advantage – constitutional and political constraints prevent US reciprocation

Lambakis 17 [Dr. Steven Lambakis is a national security and international affairs analyst specializing in space power and policy studies. Dr. Lambakis serves as the Editor-in-Chief of Comparative Strategy, a leading international journal of global affairs and strategic studies whose readership includes key policymakers, academics, and other leaders. Dr. Lambakis was educated in the fields of international politics, with special emphasis on arms control and intelligence issues, American government, and U.S. foreign policy at Northern Illinois University in DeKalb, Illinois (B.A., 1982) and the Catholic University of America in Washington D.C. (M.A., 1984, and Ph.D., 1990). Foreign Space Capabilities: Implications for U.S. National Security. September 2017. www.nipp.org/wp-content/uploads/2017/09/Foreign-Space-Capabilities-pub-2017.pdf]

While Russia is making strong technical strides toward having weapons capable of damaging or destroying U.S. satellites, it is using its foreign policy to try to hobble potential U.S. space weapons. For example, Russia (along with China) has advocated for a treaty preventing the placement of weapons in outer space and the threat or use of force against space-based assets. Russia is fully aware that there are no known technologies or capabilities to verify compliance with such a treaty. The purpose in pursuing such arms control agreements is to hobble U.S. weapons and technology development, because of the domestic political opposition such rhetoric might generate and because the United States will comply with any arms control agreement that it signs. The Russians do not have the same constitutional and political constraints in place as the United States to restrain its development of ASATs. Moreover, the Russians are accustomed to violating arms control agreements that it they have signed. Writes defense analyst Mark Schneider: “There is no reason to expect Russia to break a habit of ignoring its arms control and treaty obligations. By doing this, it has gained military advantages for decades.”119

### 1NC – Mining good

#### Private sector is key to mining and overcomes all extinction scenarios.

Pelton 17—Director Emeritus of the Space and Advanced Communications Research Institute at George Washington University, PHD in IR from Georgetown.. Pelton, Joseph N. 2017. The New Gold Rush: The Riches of Space Beckon! Springer. Accessed 8/30/19.

Are We Humans Doomed to Extinction? What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artifi cial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. Th ere is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival. If one does not believe in spending money to probe the mysteries of the universe then perhaps we can try what might be called “calibrated greed” on for size. One only needs to go to a cubesat workshop, or to Silicon Valley or one of many conferences like the “Disrupt Space” event in Bremen, Germany, held in April 2016 to recognize that entrepreneurial New Space initiatives are changing everything [ 1 ]. In fact, the very nature and dimensions of what outer space activities are today have changed forever. It is no longer your grandfather’s concept of outer space that was once dominated by the big national space agencies. The entrepreneurs are taking over. The hopeful statements in this book and the hard economic and technical data that backs them up are more than a minority opinion. It is a topic of growing interest at the World Economic Forum, where business and political heavyweights meet in Davos, Switzerland, to discuss how to stimulate new patterns of global economic growth. It is even the growing view of a group that call themselves “space ethicists.” Here is how Christopher J. Newman, at the University of Sunderland in the United Kingdom has put it: Space ethicists have offered the view that space exploration is not only desirable; it is a duty that we, as a species, must undertake in order to secure the survival of humanity over the longer term. Expanding both the resource base and, eventually, the habitats available for humanity means that any expenditure on space exploration, far from being viewed as frivolous, can legitimately be rationalized as an ethical investment choice. (Newman) On the other hand there are space ethicists and space exobiologists who argue that humans have created ecological ruin on the planet—and now space debris is starting to pollute space. Th ese countervailing thoughts by the “no growth” camp of space ethicists say we have no right to colonize other planets or to mine the Moon and asteroids—or at least no right to do so until we can prove we can sustain life here on Earth for the longer term. However, for most who are planning for the new space economy the opinion of space philosophers doesn’t really fl oat their boat. Legislators, bankers, and aspiring space entrepreneurs are far more interested in the views of the super-rich capitalists called the space billionaires. A number of these billionaires and space executives have already put some very serious money into enterprises intent on creating a new pathway to the stars. No less than five billionaires with established space ventures—Elon Musk, Paul Allen, Jeff Bezos, Sir Richard Branson, and Robert Bigelow—have invested millions if not billions of dollars into commercializing space. They are developing new technologies and establishing space enterprises that can bring the wealth of outer space down to Earth. This is not a pipe dream, but will increasingly be the economic reality of the 2020s. These wealthy space entrepreneurs see major new economic opportunities. To them space represents the last great frontier for enterprising pioneers. Th us they see an ever-expanding space frontier that offers opportunities in low-cost space transportation, satellite solar power satellites to produce clean energy 24h a day, space mining, space manufacturing and production, and eventually space habitats and colonies as a trajectory to a better human future. Some even more visionary thinkers envision the possibility of terraforming Mars, or creating new structures in space to protect our planet from cosmic hazards and even raising Earth’s orbit to escape the rising heat levels of the Sun in millennia to come. Some, of course, will say this is sci-fi hogwash. It can’t be done. We say that this is what people would have said in 1900 about airplanes, rocket ships, cell phones and nuclear devices. The skeptics laughed at Columbus and his plan to sail across the oceans to discover new worlds. When Thomas Jefferson bought the Louisiana Purchase from France or Seward bought Alaska, there were plenty of naysayers that said such investment in the unknown was an extravagant waste of money. A healthy skepticism is useful and can play a role in economic and business success. Before one dismisses the idea of an impending major new space economy and a new gold rush, it might useful to see what has already transpired in space development in just the past five decades. The world’s first geosynchronous communications satellite had a throughput capability of about 500 kb / s. In contrast, today’s state of the art Viasat 2 —a half century later— has an impressive throughput of some 140 Gb/s. Th is means that the relative throughput is nearly 300,000 greater, while its lifetime is some ten times longer (Figs. 1.1 and 1.2 ). Each new generation of communications satellite has had more power, better antenna systems, improved pointing and stabilization, and an extended lifetime. And the capabilities represented by remote sensing satellites , meteorological satellites , and navigation and timing satellites have also expanded their capabilities and performance in an impressive manner. When satellite applications first started, the market was measured in millions of dollars. Today commercial satellite services exceed a quarter of a billion dollars. Vital services such as the Internet, aircraft traffi c control and management, international banking, search and rescue and much, much more depend on application satellites. Th ose that would doubt the importance of satellites to the global economy might wish to view on You Tube the video “If Th ere Were a Day Without Satellites?” [ 2 ]. Let’s check in on what some of those very rich and smart guys think about the new space economy and its potential. (We are sorry to say that so far there are no female space billionaires, but surely this, too, will come someday soon.) Of course this twenty-fi rst century breakthrough that we call the New Space economy will not come just from new space commerce. It will also come from the amazing new technologies here on Earth. Vital new terrestrial technologies will accompany this cosmic journey into tomorrow. Information technology, robotics, artificial intelligence and commercial space travel systems have now set us on a course to allow us humans to harvest the amazing riches in the skies—new natural resources, new energy, and even totally new ways of looking at the purpose of human existence. If we pursue this course steadfastly, it can be the beginning of a New Space renaissance. But if we don’t seek to realize our ultimate destiny in space, Homo sapiens can end up in the dustbin of history—just like literally millions of already failed species. In each and every one of the five mass extinction events that have occurred over the last 1.5 billion years on Earth, some 50–80 % of all species have gone the way of the T. Rex, the woolly mammoth, and the Dodo bird along with extinct ferns, grasses and cacti. On the other hand, the best days of the human race could be just beginning. If we are smart about how we go about discovering and using these riches in the skies and applying the best of our new technologies, it could be the start of a new beginning for humanity. Konstantin Tsiokovsky, the Russian astronautics pioneer, who fi rst conceived of practical designs for spaceships, famously said: “A planet is the cradle of mankind, but one cannot live in a cradle forever.” Well before Tsiokovsky another genius, Leonardo da Vinci, said, quite poetically: “Once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” The founder of the X-Prize and of Planetary Resources, Inc., Dr. Peter Diamandis, has much more brashly said much the same thing in quite diff erent words when he said: “The meek shall inherit the Earth. The rest of us will go to Mars.” The New Space Billionaires Peter Diamandis is not alone in his thinking. From the list of “visionaries” quoted earlier, Elon Musk, the founder of SpaceX; Sir Richard Branson, the founder of Virgin Galactic; and Paul Allen, the co-founder of Microsoft and the man who financed SpaceShipOne, the world’s first successful spaceplane have all said the future will include a vibrant new space economy. Th ey, and others, have said that we can, we should and we soon shall go into space and realize the bounty that it can offer to us. Th e New Space enterprise is today indeed being led by those so-called space billionaires , who have an exciting vision of the future. They and others in the commercial space economy believe that the exploitation of outer space may open up a new golden age of astral abundance. They see outer space as a new frontier that can be a great source of new materials, energy and various forms of new wealth that might even save us from excesses of the past. Th is gold rush in the skies represents a new beginning. We are not talking about expensive new space ventures funded by NASA or other space agencies in Europe, Japan, China or India. No, these eff orts which we and others call New Space are today being forged by imaginative and resourceful commercial entrepreneurs. Th ese twenty-fi rst century visionaries have the fortitude and zeal to look to the abundance above. New breakthroughs in technology and New Space enterprises may be able to create an “astral life raft” for humanity. Just as Columbus and the Vikings had the imaginative drive that led them to discover the riches of a new world, we now have a cadre of space billionaires that are now leading us into this New Space era of tomorrow. These bold leaders, such as Paul Allen and Sir Richard Branson, plus other space entrepreneurs including Jeff Bezos of Amazon and Blue Origin, and Robert Bigelow, Chairman of Budget Suites and Bigelow Aerospace, not only dream of their future in the space industry but also have billions of dollars in assets. These are the bright stars of an entirely new industry that are leading us into the age of New Space commerce. These space billionaires, each in their own way, are proponents of a new age of astral abundance. Each of them is launching new commercial space industries. They are literally transforming our vision of tomorrow. These new types of entrepreneurial aerospace companies—the New Space enterprises—give new hope and new promise of transforming our world as we know it today. The New Space Frontier What happens in space in the next few decades, plus corresponding new information technologies and advanced robotics, will change our world forever. These changes will redefi ne wealth, change our views of work and employment and upend almost everything we think we know about economics, wealth, jobs, and politics. Th ese changes are about truly disruptive technologies of the most fundamental kinds. If you thought the Internet, smart phones, and spandex were disruptive technologies, just hang on. You have not seen anything yet. In short, if you want to understand a transition more fundamental than the changes brought to the twentieth century world by computers, communications and the Internet, then read this book. There are truly riches in the skies. Near-Earth asteroids largely composed of platinum and rare earth metals have an incredible value. Helium-3 isotopes accessible in outer space could provide clean and abundant energy. There is far more water in outer space than is in our oceans. In the pages that follow we will explain the potential for a cosmic shift in our global economy, our ecology, and our commercial and legal systems. These can take place by the end of this century. And if these changes do not take place we will be in trouble. Our conventional petro-chemical energy systems will fail us economically and eventually blanket us with a hydrocarbon haze of smog that will threaten our health and our very survival. Our rare precious metals that we need for modern electronic appliances will skyrocket in price, and the struggle between “haves” and “have nots” will grow increasingly ugly. A lack of affordable and readily available water, natural resources, food, health care and medical supplies, plus systematic threats to urban security and systemic warfare are the alternatives to astral abundance. The choices between astral abundance and a downward spiral in global standards of living are stark. Within the next few decades these problems will be increasingly real. By then the world may almost be begging for new, out of- the-box thinking. International peace and security will be an indispensable prerequisite for exploitation of astral abundance, as will good government for all. No one nation can be rich and secure when everyone else is poor and insecure. In short, global space security and strategic space defense, mediated by global space agreements, are part of this new pathway to the future.

#### Water wars escalate.

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Interstate conflict over water might occur, the ICA indicated, when several states rely on a shared river system for much of their water supply and one or more of the riparian states sought to maximize the river’s flow for their own benefit at the expense of other states in the basin, amplifying any scarcities already present there. “We judge that as water shortages become more acute beyond the next ten years, water in shared basins will increasingly be used as leverage,” the ICA stated. An upstream state enjoying superior control over a river’s flow might exploit its advantage, say, to extract advantage in international negotiations or to attract international aid for infrastructure projects. As the ICA further noted, “…we assess that states will also use their inherent ability to construct and support major water projects to obtain regional influence or preserve their water interests.”16 The utilization of a state’s superior position in a shared river system to extract political or economic advantage can prove especially destabilizing, the ICA suggested, when weaker states in the system (typically the downstream countries) are especially vulnerable to water scarcity because of long-standing social, economic, and political conditions. Without identifying any particular states by name, the study suggested that this could occur when downstream states suffer from endemic corruption, poor water management practices, and systemic favoritism when it comes to the allocation of scarce water supplies. In such cases, any reduction in the flow of water by an upstream country could easily combine with internal factors in a downstream country to provoke widespread unrest and conflict. “Water shortages, and government failures to manage them, are likely to lead to social disruptions, pressure on national and local leaders, and potentially political instability,” the report noted.17 Although most discussion of the climate and water security nexus has continued to emphasize the risk of internal conflict arising from warming-related water scarcities, some analysts have pursued the line of inquiry introduced by the 2012 ICA, focusing on interstate tensions arising within shared river basins. This was a prominent theme, for example, of a 2013 study conducted by the National Research Council (NRC) on behalf of the IC. Entitled Climate and Social Stress: Implications for Security Analysis, the 2013 NRC report sought to better identify the links between global warming, pre-existing social vulnerabilities, and the likelihood of conflict. While it echoed earlier studies by the CNA and NIC in identifying internal factors like poverty, ethnic discord, and governmental ineptitude as likely pre-conditions for climate-related conflict, it also examined dangers arising from dependence on shared river systems, especially in cases where cooperation among the riparian powers in managing the system is limited and global warming is expected to reduce future water flows.18 For the NRC, the river systems of greatest concern in this respect were those that originate in the Himalayan Mountains and depend, for a significant share of the annual flow, on meltwater from the Himalayan glaciers. These glaciers are an important source of meltwater for many of Asia’s major rivers, including the Indus, Ganges, Brahmaputra, and Mekong Rivers. These rivers originate in China but travel through India, Pakistan, Nepal, Bangladesh, Laos, Cambodia, Thailand, and Vietnam—countries with a combined population of over 3.4 billion people, or approximately 44 percent of the world’s total population.19 A large share of the population in these countries depends on agriculture for its livelihood, so ensuring access to adequate supplies of water is a prime local and national priority. During the monsoon season, heavy rains provide these rivers with abundant water, but during dry seasons they are dependent on glacial meltwater—and, with the rise in global temperatures, the Himalayan glaciers are melting, jeopardizing future water availability in these river basins. Given a history of ethnic and social discord within many of these countries and long-standing tensions among them, analysts fear that such shortages could aggravate both internal and external tensions and ignite interstate as well as intrastate conflict.20 As was the case of previous IC-initiated studies, the authors of the 2013 NRC report were reluctant to identify specific countries in their findings, referring again to “countries of security concern” or other such euphemisms. However, they did select one of these countries in particular: Pakistan. They chose that country for special analysis, the report indicated, because “Pakistan presents a clear example of a country where social dynamics and susceptibility to harm from climate events combine to create a potentially unstable situation.”21 Pakistan was said to suffer from multiple risk factors: Its economy is largely dependent on agriculture; much of the water used for irrigation purposes comes from just one source, the Indus River; control over the allocation of irrigation waters is often exercised by privileged elites, leaving millions of Pakistanis vulnerable to water shortages; and much of the water flowing into the Indus comes from China or from tributaries originating in India, leaving Pakistan in an unfavorable (downstream) position in the system. These conditions have led, in the past, to internal squabbles over water rights and to tensions with India over control of the Indus; now, with the likelihood of diminished meltwater from the Himalayan glaciers, the risk of water scarcity triggering violent conflict of one sort or another becomes that much greater.22 Pakistan, the Indus, and U.S. Security There is no doubt that Pakistan is considered by U.S. security analysts as a “state important to U.S. national security interests,” the term used by the Defense Intelligence Agency to describe countries of concern in the 2012 ICA on water. Not only is Pakistan a critical—if not always wholehearted—partner in the global war on terror, but it also possesses a substantial arsenal of nuclear weapons whose security is a matter of enormous concern to American leaders.23 Should those munitions wind up with rogue elements of the Pakistani military (some of whose members are believed to maintain clandestine links to radical Islamic organizations), or even worse, should Pakistan descend into civil war and the weapons fall into untrustworthy or hostile hands, the safety of India and other US allies—as well as of American forces deployed in the region—would be at grave risk.24 Ensuring Pakistan’s stability therefore, has long been a major U.S. security objective, prompting regular deliveries of American arms and other military aid. Yet, despite billions of dollars in American aid, Pakistan remains vulnerable to social and ethnic internal strife.25 As noted, farming is the principal economic activity in Pakistan, and ensuring access to water is an overarching public and government concern. This means, above all, managing the use of the Indus—the country’s main source of water for irrigation and its major source of power for electricity generation. Pakistan’s rising population and growing cities, with their rings of factories, are placing an immense strain on the Indus, leading to competition between farmers, industrialists, and urban consumers. With water and power shortages becoming an increasingly frequent aspect of daily life, public protests—sometimes turning violent—have erupted across the country. In one particularly intense bout of rioting, following a prolonged power outage in June 2012, protestors burned trains, blocked roads, looted shops, and damaged banks and gas stations.26 However bad things might be in Pakistan today, climate change is likely to make conditions far worse in the years ahead. Prolonged droughts, climate scientists believe, will occur with increasing regularity, posing a severe threat to the nation’s agricultural sector and further reducing the supply of hydroelectric power. At the same time, warming is expected to increase the intensity of monsoon downpours, resulting in massive flooding (as occurred in 2010) and the loss of valuable topsoil, further adding to Pakistan’s woes. As the Himalayan glaciers melt, moreover, water flow through the Indus will diminish.27 With the competition for land and water resources bound to increase and with Pakistan already divided along ethnic and religious lines, widespread civil strife will become ever more likely, possibly jeopardizing the survival of the state. It is impossible to predict exactly how the United States might respond to a systemic breakdown of state governance in Pakistan. One thing is clear, however: At the earliest sign that the country’s nuclear weapons are at risk of falling into the hands of hostile parties, the American military would respond with decisive force. In fact, research conducted by the nonpartisan Nuclear Threat Initiative (NTI) has revealed that the Joint Special Operations Command (JSOC) and specialized Army units have been training for such contingencies for some time and have deployed all the necessary gear to the region. In the event of a coup or crisis, the NTI revealed, “U.S. forces would rush into the country, crossing borders, rappelling down from helicopters, and parachuting out of airplanes, so they can secure known or suspected nuclear-storage sites.” Recognizing that any such actions by American forces could trigger widespread resistance by the Pakistani army and/or various jihadist groups, the U.S. Central Command, which has authority over all American forces in the region, has developed plans for backing up JSOC personnel with full-scale military support.28 Another scenario that has some analysts worried is the possibility that a time of sharply reduced water flow through the Indus will coincide with efforts by India to exploit its advantageous position as the upper riparian on three key tributaries of the Indus—the Ravi, the Beas, and the Sutlej—to divert water for its own use, thereby depriving downstream Pakistan of vital supplies and provoking a war between these two countries. India was granted control over the three tributaries under the Indus Water Treaty of 1960, and various Indian leaders have threatened at times to dam the rivers or otherwise reduce their flow into Pakistan as a reprisal for Pakistani attacks on Indian bases in the disputed territory of Kashmir (through which the tributaries flow); this, in turn, has provoked counter-threats from Pakistani leaders.29 What analysts fear most, in such a situation, is that India, possessing superior conventional forces, would overpower Pakistan’s equivalent armies, leading Pakistan’s leaders to order the use of nuclear weapons against India, igniting a regional nuclear war. Such a conflict, scientists have calculated, would result in 50 to 125 million fatalities, and produce a dust cloud covering much of the Earth, decimating global agriculture—an outcome with enormous implications for American national security.30

#### So do resource wars.

Klare 13 – Michael T., professor emeritus of peace and world-security studies at Hampshire College and senior visiting fellow at the Arms Control Association in Washington, DC, " How Resource Scarcity and Climate Change Could Produce a Global Explosion", The Nation, 4/22/2013, <https://www.thenation.com/article/how-resource-scarcity-and-climate-change-could-produce-global-explosion/> JHW

Resource Shortages and Resource Wars Start with one simple given: the prospect of future scarcities of vital natural resources, including energy, water, land, food and critical minerals. This in itself would guarantee social unrest, geopolitical friction and war. It is important to note that absolute scarcity doesn’t have to be on the horizon in any given resource category for this scenario to kick in. A lack of adequate supplies to meet the needs of a growing, ever more urbanized and industrialized global population is enough. Given the wave of extinctions that scientists are recording, some resources—particular species of fish, animals and trees, for example—will become less abundant in the decades to come, and may even disappear altogether. But key materials for modern civilization like oil, uranium and copper will simply prove harder and more costly to acquire, leading to supply bottlenecks and periodic shortages. Oil—the single most important commodity in the international economy—provides an apt example. Although global oil supplies may actually grow in the coming decades, many experts doubt that they can be expanded sufficiently to meet the needs of a rising global middle class that is, for instance, expected to buy millions of new cars in the near future. In its 2011 World Energy Outlook, the International Energy Agency claimed that an anticipated global oil demand of 104 million barrels per day in 2035 will be satisfied. This, the report suggested, would be thanks in large part to additional supplies of “unconventional oil” (Canadian tar sands, shale oil and so on), as well as 55 million barrels of new oil from fields “yet to be found” and “yet to be developed.” However, many analysts scoff at this optimistic assessment, arguing that rising production costs (for energy that will be ever more difficult and costly to extract), environmental opposition, warfare, corruption and other impediments will make it extremely difficult to achieve increases of this magnitude. In other words, even if production manages for a time to top the 2010 level of 87 million barrels per day, the goal of 104 million barrels will never be reached and the world’s major consumers will face virtual, if not absolute, scarcity. Water provides another potent example. On an annual basis, the supply of drinking water provided by natural precipitation remains more or less constant: about 40,000 cubic kilometers. But much of this precipitation lands on Greenland, Antarctica, Siberia and inner Amazonia where there are very few people, so the supply available to major concentrations of humanity is often surprisingly limited. In many regions with high population levels, water supplies are already relatively sparse. This is especially true of North Africa, Central Asia and the Middle East, where the demand for water continues to grow as a result of rising populations, urbanization and the emergence of new water-intensive industries. The result, even when the supply remains constant, is an environment of increasing scarcity. Wherever you look, the picture is roughly the same: supplies of critical resources may be rising or falling, but rarely do they appear to be outpacing demand, producing a sense of widespread and systemic scarcity. However generated, a perception of scarcity—or imminent scarcity—regularly leads to anxiety, resentment, hostility and contentiousness. This pattern is very well understood, and has been evident throughout human history. In his book Constant Battles, for example, Steven LeBlanc, director of collections for Harvard’s Peabody Museum of Archaeology and Ethnology, notes that many ancient civilizations experienced higher levels of warfare when faced with resource shortages brought about by population growth, crop failures or persistent drought. Jared Diamond, author of the bestseller Collapse, has detected a similar pattern in Mayan civilization and the Anasazi culture of New Mexico’s Chaco Canyon. More recently, concern over adequate food for the home population was a significant factor in Japan’s invasion of Manchuria in 1931 and Germany’s invasions of Poland in 1939 and the Soviet Union in 1941, according to Lizzie Collingham, author of The Taste of War. Although the global supply of most basic commodities has grown enormously since the end of World War II, analysts see the persistence of resource-related conflict in areas where materials remain scarce or there is anxiety about the future reliability of supplies. Many experts believe, for example, that the fighting in Darfur and other war-ravaged areas of North Africa has been driven, at least in part, by competition among desert tribes for access to scarce water supplies, exacerbated in some cases by rising population levels. “In Darfur,” says a 2009 report from the UN Environment Programme on the role of natural resources in the conflict, “recurrent drought, increasing demographic pressures, and political marginalization are among the forces that have pushed the region into a spiral of lawlessness and violence that has led to 300,000 deaths and the displacement of more than two million people since 2003.” Anxiety over future supplies is often also a factor in conflicts that break out over access to oil or control of contested undersea reserves of oil and natural gas. In 1979, for instance, when the Islamic revolution in Iran overthrew the Shah and the Soviets invaded Afghanistan, Washington began to fear that someday it might be denied access to Persian Gulf oil. At that point, President Jimmy Carter promptly announced what came to be called the Carter Doctrine. In his 1980 State of the Union Address, Carter affirmed that any move to impede the flow of oil from the Gulf would be viewed as a threat to America’s “vital interests” and would be repelled by “any means necessary, including military force.” In 1990, this principle was invoked by President George H.W. Bush to justify intervention in the first Persian Gulf War, just as his son would use it, in part, to justify the 2003 invasion of Iraq. Today, it remains the basis for US plans to employ force to stop the Iranians from closing the Strait of Hormuz, the strategic waterway connecting the Persian Gulf to the Indian Ocean through which about 35 percent of the world’s seaborne oil commerce passes. Recently, a set of resource conflicts have been rising toward the boiling point between China and its neighbors in Southeast Asia when it comes to control of offshore oil and gas reserves in the South China Sea. Although the resulting naval clashes have yet to result in a loss of life, a strong possibility of military escalation exists. A similar situation has also arisen in the East China Sea, where China and Japan are jousting for control over similarly valuable undersea reserves. Meanwhile, in the South Atlantic Ocean, Argentina and Britain are once again squabbling over the Falkland Islands (called Las Malvinas by the Argentinians) because oil has been discovered in surrounding waters. By all accounts, resource-driven potential conflicts like these will only multiply in the years ahead as demand rises, supplies dwindle and more of what remains will be found in disputed areas. In a 2012 study titled Resources Futures, the respected British think-tank Chatham House expressed particular concern about possible resource wars over water, especially in areas like the Nile and Jordan River basins where several groups or countries must share the same river for the majority of their water supplies and few possess the wherewithal to develop alternatives. “Against this backdrop of tight supplies and competition, issues related to water rights, prices, and pollution are becoming contentious,” the report noted. “In areas with limited capacity to govern shared resources, balance competing demands, and mobilize new investments, tensions over water may erupt into more open confrontations.” Heading for a Resource-Shock World Tensions like these would be destined to grow by themselves because in so many areas supplies of key resources will not be able to keep up with demand. As it happens, though, they are not “by themselves.” On this planet, a second major force has entered the equation in a significant way. With the growing reality of climate change, everything becomes a lot more terrifying. Normally, when we consider the impact of climate change, we think primarily about the environment—the melting Arctic ice cap or Greenland ice shield, rising global sea levels, intensifying storms, expanding desert and endangered or disappearing species like the polar bear. But a growing number of experts are coming to realize that the most potent effects of climate change will be experienced by humans directly through the impairment or wholesale destruction of habitats upon which we rely for food production, industrial activities or simply to live. Essentially, climate change will wreak its havoc on us by constraining our access to the basics of life: vital resources that include food, water, land and energy. This will be devastating to human life, even as it significantly increases the danger of resource conflicts of all sorts erupting. We already know enough about the future effects of climate change to predict the following with reasonable confidence: \* Rising sea levels will in the next half-century erase many coastal areas, destroying large cities, critical infrastructure (including roads, railroads, ports, airports, pipelines, refineries and power plants) and prime agricultural land. \* Diminished rainfall and prolonged droughts will turn once-verdant croplands into dust bowls, reducing food output and turning millions into “climate refugees.” \* More severe storms and intense heat waves will kill crops, trigger forest fires, cause floods and destroy critical infrastructure. No one can predict how much food, land, water and energy will be lost as a result of this onslaught (and other climate-change effects that are harder to predict or even possibly imagine), but the cumulative effect will undoubtedly be staggering. In Resources Futures, Chatham House offers a particularly dire warning when it comes to the threat of diminished precipitation to rain-fed agriculture. “By 2020,” the report says, “yields from rain-fed agriculture could be reduced by up to 50%” in some areas. The highest rates of loss are expected to be in Africa, where reliance on rain-fed farming is greatest, but agriculture in China, India, Pakistan and Central Asia is also likely to be severely affected. Heat waves, droughts and other effects of climate change will also reduce the flow of many vital rivers, diminishing water supplies for irrigation, hydro-electricity power facilities and nuclear reactors (which need massive amounts of water for cooling purposes). The melting of glaciers, especially in the Andes in Latin America and the Himalayas in South Asia, will also rob communities and cities of crucial water supplies. An expected increase in the frequency of hurricanes and typhoons will pose a growing threat to offshore oil rigs, coastal refineries, transmission lines and other components of the global energy system. The melting of the Arctic ice cap will open that region to oil and gas exploration, but an increase in iceberg activity will make all efforts to exploit that region’s energy supplies perilous and exceedingly costly. Longer growing seasons in the north, especially Siberia and Canada’s northern provinces, might compensate to some degree for the desiccation of croplands in more southerly latitudes. However, moving the global agricultural system (and the world’s farmers) northward from abandoned farmlands in the United States, Mexico, Brazil, India, China, Argentina and Australia would be a daunting prospect. It is safe to assume that climate change, especially when combined with growing supply shortages, will result in a significant reduction in the planet’s vital resources, augmenting the kinds of pressures that have historically led to conflict, even under better circumstances. In this way, according to the Chatham House report, climate change is best understood as a “threat multiplier…a key factor exacerbating existing resource vulnerability” in states already prone to such disorders. Like other experts on the subject, Chatham House’s analysts claim, for example, that climate change will reduce crop output in many areas, sending global food prices soaring and triggering unrest among those already pushed to the limit under existing conditions. “Increased frequency and severity of extreme weather events, such as droughts, heat waves and floods, will also result in much larger and frequent local harvest shocks around the world….These shocks will affect global food prices whenever key centers of agricultural production area are hit—further amplifying global food price volatility.” This, in turn, will increase the likelihood of civil unrest. When, for instance, a brutal heat wave decimated Russia’s wheat crop during the summer of 2010, the global price of wheat (and so of that staple of life, bread) began an inexorable upward climb, reaching particularly high levels in North Africa and the Middle East. With local governments unwilling or unable to help desperate populations, anger over impossible-to-afford food merged with resentment toward autocratic regimes to trigger the massive popular outburst we know as the Arab Spring. Many such explosions are likely in the future, Chatham House suggests, if current trends continue as climate change and resource scarcity meld into a single reality in our world. A single provocative question from that group should haunt us all: “Are we on the cusp of a new world order dominated by struggles over access to affordable resources?” For the US intelligence community, which appears to have been influenced by the report, the response was blunt. In March, for the first time, Director of National Intelligence James R. Clapper listed “competition and scarcity involving natural resources” as a national security threat on a par with global terrorism, cyberwar and nuclear proliferation. “Many countries important to the United States are vulnerable to natural resource shocks that degrade economic development, frustrate attempts to democratize, raise the risk of regime-threatening instability, and aggravate regional tensions,” he wrote in his prepared statement for the Senate Select Committee on Intelligence. “Extreme weather events (floods, droughts, heat waves) will increasingly disrupt food and energy markets, exacerbating state weakness, forcing human migrations, and triggering riots, civil disobedience, and vandalism.” There was a new phrase embedded in his comments: “resource shocks.” It catches something of the world we’re barreling toward, and the language is striking for an intelligence community that, like the government it serves, has largely played down or ignored the dangers of climate change. For the first time, senior government analysts may be coming to appreciate what energy experts, resource analysts and scientists have long been warning about: the unbridled consumption of the world’s natural resources, combined with the advent of extreme climate change, could produce a global explosion of human chaos and conflict. We are now heading directly into a resource-shock world.

### Kessler

#### Collision risk is tiny

Wein 9 [Lawrence M. Wein, Professor & Senior Fellow at Stanford’s Center for International Security and Cooperation Jeffrey S. Skoll Professor of Management Science at Stanford University and Senior Fellow at Stanford’s Center for International Security and Cooperation, former DEC Leaders for Manufacturing Professor of Management Science at MIT, and Andrew M. Bradley, PhD-Institute for Computational and Mathematical Engineering at Stanford University, Space debris: Assessing risk and responsibility, Advances in Space Research 43 (2009) 1372–1390]

More importantly, while our numerical results mimic earlier results (Liou and Johnson, 2005; Walker and Martin, 2004) that stressed the importance of postmission deorbiting, we do not necessarily agree with the claim that the only way to prevent future problems is to remove existing large intacts from space (Liou and Johnson, 2006, 2008). The divergence between our views and those in Liou and Johnson (2006, 2008) is perhaps due to the different performance metrics used. The root causes for alarm in Liou and Johnson (2006, 2008) appear to be the growth rate of fragments and the small increase in the rate of catastrophic collisions over the next 200 years (Liou and Johnson, 2008, Fig. 2). However, the great majority of catastrophic collisions in the SOI do not involve operational spacecraft, and are hazardous only in the sense that the fragments generated from such a collision could subsequently damage or destroy operational spacecraft. Therefore, we introduced the notion of the lifetime risk of an operational spacecraft as the primary performance metric. Our model predicts that the lifetime risk is <5x10^-4 [less than .0005%] over the next two centuries, and always stays <10^-3 [less than .001%] than if there is very high (>98%) spacecraft deorbiting compliance. These risks appear to be low relative to the immense cost and considerable technological uncertainty involved in removing large objects from space, are dwarfed by the ~20% historical mission-impacting (but not necessarily mission-ending) failure rate of spacecraft (Frost and Sullivan, 2004), and could be overestimated if improved traffic management techniques lower future collision risks (Johnson, 2004). Hence, the need to bring large objects down from space does not appear to be as clear cut as suggested in Liou and Johnson (2006, 2008). Nonetheless, our model does not incorporate the possibility of intentional catastrophic collisions (ASAT tests, space wars) that could conceivably occur in the future. In addition, Fig. 5 considers only catastrophic collisions, whereas noncatastrophic intact-fragment collisions could easily disable an operational spacecraft. If the operational lifetime risk is modified to include noncatastrophic collisions with fragments >= 10cm, then the sustainable risk rises by ~50%: it increases from 2.19x10^-2 [.0219%] to 3.09x10^-2 in the base case, and increases from 4.91x10^-4 [.000491%] to 7.94x10^-4 in the full compliance case. Moreover, if fragments >= 1 cm (rather than >= 10 cm) are harmful to spacecraft (Johnson, 2004), then we (as well as other researchers) could be underestimating the risk.

#### Low risk of collisions – it’s overhyped

Albrecht 16 [Mark Albrecht, chairman of the board of USSpace LLC, head of the White House National Space Council from 1989 to 1992, and Paul Graziani, CEO and founder of Analytical Graphics, a company that develops software and provides mission assurance through the Commercial Space Operations Center (ComSpOC), Congested space is a serious problem solved by hard work, not hysteria, 2016, https://spacenews.com/op-ed-congested-space-is-a-serious-problem-solved-by-hard-work-not-hysteria/]

Popular culture has embraced the risks of collisions in space in films like Gravity. Some participants have dramatized the issue by producing graphics of Earth and its satellites, which make our planet look like a fuzzy marble, almost obscured by a dense cloud of white pellets meant to conceptualize space congestion.

Unfortunately, for the sake of a good visual, satellites are depicted as if they were hundreds of miles wide, like the state of Pennsylvania (for the record, there are no space objects the size of Pennsylvania in orbit). Unfortunately, this is the rule, not the exception, and almost all of these articles, movies, graphics, and simulations are exaggerated and misleading. Space debris and collision risk is real, but it certainly is not a crisis.

So what are the facts?

On the positive side, space is empty and it is vast. At the altitude of the International Space Station, one half a degree of Earth longitude is almost 40 miles long. That same one half a degree at geostationary orbit, some 22,000 miles up is over 230 miles long. Generally, we don’t intentionally put satellites closer together than one-half degree. That means at geostationary orbit, they are no closer than 11 times as far as the eye can see on flat ground or on the sea: That’s the horizon over the horizon 10 times over. In addition, other than minute forces like solar winds and sparse bits of atmosphere that still exist 500 miles up, nothing gets in the way of orbiting objects and they behave quite predictably. The location of the smallest spacecraft can be predicated within a 1,000 feet, 24 hours in advance.

#### But if they’re right, threshold’s too low to solve

Kurt 15 [Joseph Kurt, JD- William & Mary School of Law, BA-Marquette University, NOTE: TRIUMPH OF THE SPACE COMMONS: ADDRESSING THE IMPENDING SPACE DEBRIS CRISIS WITHOUT AN INTERNATIONAL TREATY, 40 Wm. & Mary Envtl. L. & Pol'y Rev. 305 (2015)]

With respect to some common resource problems, the prospect of continued cooperation may be enough to suggest a successful resolution to the issue. Say, for example, that the farmers from Hardin's pasture recognize the threat of overgrazing and, after some negotiation, agree to slow the introduction of new cattle to sustainable levels. This would seem to resolve the issue. As long as farmers abide by that agreement, they will avoid the tragedy of the commons.

Achieving a more or less permanent solution to the space debris problem is not as straightforward. The reason is that even as the space debris problem is being redressed, the risk of space objects colliding remains as long as there are uncontrolled objects whizzing around the Earth's atmosphere. 214Link to the text of the note With millions of such objects now in orbit, this will indeed be the case for a very long time. 215Link to the text of the note

Improved tracking capabilities, avoidance maneuvers, and (eventually) ADR technologies all work together to make such collisions less likely. However, no remediation can remove the risk of accidents altogether, and some collisions could have devastating effects: the destruction of even one large satellite could double the amount of space debris in orbit. 216Link to the text of the note Of course, any such increase in the amount of debris in orbit then renders other collisions more likely to occur. 217Link to the text of the note It is thus possible that after a number of years making progress towards reaching a sustainable level of debris, a stroke of bad luck could rapidly undo such progress and unleash the dreaded Kessler Syndrome. 218Link to the text of the note

#### Long timeframe and squo solves

--Long timeframe – Kessler initially said debris would kill us by 2000 and recanted – now says a century

--tracking now helps avoid collisions – can see objects as small as a softball

--japan has a magnetic net, Australia a laser to remediate

--sufficiency – need to just remove 5 pieces a year to solve and we’re on cusp – solving it 100 yyrs early

Kurt 15 [Joseph Kurt, JD- William & Mary School of Law, BA-Marquette University, NOTE: TRIUMPH OF THE SPACE COMMONS: ADDRESSING THE IMPENDING SPACE DEBRIS CRISIS WITHOUT AN INTERNATIONAL TREATY, 40 Wm. & Mary Envtl. L. & Pol'y Rev. 305 (2015)]

A. Practical Considerations: Feasible Solutions to the Space Debris Problem Are on Their Way

One key question in assessing whether an international treaty is a requisite for solving the space debris problem is just how difficult it will be to fashion a remedy. The more complex and costly are feasible solutions, the more likely it is that a comprehensive regime is necessary to bind the various actors together. 93Link to the text of the note

A good place to begin is to determine just how imminent is the onset of the cascade of exponentially more frequent debris-creating collisions, known as the Kessler Syndrome. 94Link to the text of the note To be certain, no one can be sure--this phenomenon being subject to highly complex probabilities. 95Link to the text of the note Indeed, experts' estimates of when such a cascade will become irreversible vary [\*316] widely. 96Link to the text of the note The National Research Council produced a report in 2011 that suggested that "space might be just 10 or 20 years away from severe problems." 97Link to the text of the note In fact, the cascading effect has already begun, albeit at a modest pace. 98Link to the text of the note However, Donald Kessler, who first described the eponymous effect in 1978, has significantly recalibrated his own outlook over the years. 99Link to the text of the note Originally, Kessler predicted that catastrophe would result by the year 2000. 100Link to the text of the note That date long passed, Kessler now speaks of a century-long process that "we have time to deal with." 101Link to the text of the note

Nevertheless, few would disagree with Cristophe Bonnal of the Centre National d'Études Spatiales ("CNES"), the French space agency, who says that it is "not yet clear" how much time we have to act. 102Link to the text of the note None of this is to say that interested parties should not act with great dispatch to address the space debris problem. Even if catastrophe is not on the immediate horizon--as some have suggested--Heiner Klinkrad, the European Space Agency's leading authority on space debris points out that "[t]he longer you wait, the more difficult and far more expensive" any solution will be. 103Link to the text of the note

The additional slack in plausible timelines is cause for optimism when one considers the progress being made towards remediating the problem of space debris. Such remediation entails a three-pronged approach: preventive measures to reduce the creation of new debris, 104Link to the text of the note space debris tracking technologies, 105Link to the text of the note and active debris removal ("ADR"). 106Link to the text of the note

In an effort to address the first prong, the United Nations General Assembly in 2007 endorsed the COPUOS Space Debris Mitigation Guidelines. 107Link to the text of the note The recommended measures include design changes which would [\*317] avoid the previously common practice of releasing debris during standard operations, refraining from intentional destruction of space objects, and limiting the risk of collisions through avoidance maneuvers and delaying launch times. 108Link to the text of the note As the COPUOS document points out, many of these practices had already been adopted by spacefaring nations. 109Link to the text of the note

Compliance with the COPUOS Mitigation Guidelines is voluntary and has not been universal; 110Link to the text of the note however, many nations do take steps beyond those called for in the Mitigation Guidelines, recognizing the importance of redressing the issue. 111Link to the text of the note That said, even if no nation ever again launched a single object into outer space, the operation of the Kessler Syndrome would ensure that, over time, continuing collisions amongst already present objects would result in Earth's orbit being rendered unusable. 112Link to the text of the note

Improvements in space debris tracking technology are another partial solution that promises to help actors avoid collisions by identifying orbital debris in the path of satellites or spacecraft. 113Link to the text of the note There are limits on the effectiveness of such tracking, however, including the inability of some optical systems to track objects at night. 114Link to the text of the note Moreover, commonly employed systems cannot continually track objects smaller than thirty centimeters in diameter. 115Link to the text of the note New systems are being developed, however, that will use lasers that can track the location of objects as small as a softball--sometimes to within one meter. 116Link to the text of the note Such technology is still at the planning stage for NASA, 117Link to the text of the note but Lockheed Martin is teaming up with an Australian-based company on a laser-tracking project already in the works. 118Link to the text of the note Another promising development comes from scientists at the Massachusetts Institute of Technology, who are working on soccer-ball-sized robots [\*318] designed to travel alongside the ISS, investigating potentially harmful space debris along the way. 119Link to the text of the note

But while tracking space debris can help avoid specific accidents, and thus slow the machinations of the Kessler Syndrome, only ADR can stabilize the space environment. 120Link to the text of the note

Fortunately, the targets for ADR that scientists believe will allow us to forestall an irreversible cascade of collisions are relatively modest. 121Link to the text of the note The most common estimate is that removing five to ten large pieces of debris per year is enough to keep the Kessler Syndrome at bay. 122Link to the text of the note And even more encouraging is that a broad array of national and private actors are exploring a plethora of ADR methods. 123Link to the text of the note For example, the Japanese hope to deploy, by 2019, a magnetic net that will draw pieces of space debris down to the Earth's atmosphere, where they will burn up. 124Link to the text of the note Such use of the atmosphere to incinerate debris is a common element of many ADR strategies, whether they employ nets, harpoons, tentacles, or ion thrusters to impact the debris. 125Link to the text of the note Meanwhile, a German Space Agency program is developing the means to robotically capture satellites. 126Link to the text of the note Other solutions include using enormous puffs of air, static electricity, or lasers to throw objects out of orbit. 127Link to the text of the note

Obviously, such projects carry a hefty price tag, but funding is coming in from a variety of sources. 128Link to the text of the note A laser-based project being developed by Australian National University, for example, received $ 20 million from the Australian government and an additional $ 130 million from NASA and other international public and private actors. 129Link to the text of the note But even these sums [\*319] are dwarfed by the $ 2 billion that Russia's leading space corporation, Energia, is investing in a nuclear-powered pod that it hopes to deploy by 2023. 130Link to the text of the note This pod will fly around space for fifteen years, knocking debris out of the atmosphere using an ion drive. 131Link to the text of the note

That substantial investments in ADR technologies have seemingly put us on the cusp of possessing the technology to stabilize the space environment significantly undermines claims that incentives to solve the orbital debris problem are lacking because of its nature as a "tragedy of the commons". 132Link to the text of the note Successful implementation of a solution is still years away--and can't be presumed. But taken together with the fact that we likely have a decades-long window to redress the problem, 133Link to the text of the note Col. Joseph Imburgia's 2011 warning that "a binding international agreement is needed to provide stability and order . . . and to preserve mankind's access to and through space" looks less and less prescient. 134Link to the text of the note

### Multilat

**Space cooperation doesn’t lead to broader relations.**

**Sterner 15** (Eric Sterner is a fellow at the George C. Marshall Institute. He held senior staff positions for the U.S. House Science and Armed Services committees and served in DoD and as NASA’s associate deputy administrator for policy and planning, “Talk and Cooperation in Space” 8/6/2015 <https://spacenews.com/op-ed-china-talk-and-cooperation-in-space/>)

How might cooperation with China benefit the United States? Some hold that cooperation in space helps promote cooperation on Earth. Writing in SpaceNews in 2013, Michael Krepon argued “The more they cooperate in space, the less likely it is that their competition on Earth will result in military confrontation. The reverse is also true.” That sentiment is widespread and flows from the nobility of exploration. **If only it were so.** Unfortunately, a country’s space behavior appears to have little affect on its terrestrial actions. Russia’s multidecadal human spaceflight partnership with the United States did not prevent it from invading and destabilizing Ukraine when it moved toward a closer relationship with the European Union, many of whose members are Russian partners in the International Space Station. Space cooperation **has not, and will not**, prevent the continued worsening of the security environment in Europe, which flows from Russian behavior on Earth, not in space. **Space cooperation with China is similarly unlikely to moderate its behavior**. Tensions in Asia derive from China’s insistence on pressing unlawful territorial claims in the Pacific, most recently by transforming disputed coral reefs into would-be military bases. Ironically, civilian space technology has proved critical in documenting these aggressive moves. To further demonstrate the civil space cooperation does not promote cooperation on Earth, we need look no further than recent history. The NASA administrator’s visit to China in the fall of 2014 nearly coincided with China’s hacking of NOAA, with whom Beijing has a “partnership” in studying climate change. Military confrontation flows from the interaction of hard power in pursuit of competing national interests. Space cooperation falls into the realm of soft power. It has value in strengthening relationships among like-minded states with similar interests. China’s aggressiveness toward its neighbors, its human rights record and its cyberattacks on the United States strongly demonstrate that it and the United States are **not of like minds**. This is not the result of insufficient space cooperation, but of divergent national interests. The United States is a status quo power; China is not.

#### Multilateralism can’t stop conflict

Bordachev 13 (Timofei, Doctor of Political Science, is the Director of the Center for Comprehensive International and European Studies at the Higher School of Economics, “Political Tsunami Hits Hard,” 6/30, http://eng.globalaffairs.ru/number/Political-Tsunami-Hits-Hard-16054)

The financial crisis in the United States, which in 2008 went global, and the continuing efforts by countries around the world to fight its effects have highlighted four most important tendencies in international affairs. First, pretty obvious is the conflict between the growing economic unity of the world and its worsening political fragmentation. The rise of sovereign ambitions and attempts to address all problems at the national level has come into conflict with financial and economic globalization and exacerbates crisis trends. Second, democratization in international politics and greater independence of individual states play an ever greater role. This “in-depth unfreezing” for the first time manifested itself in China’s soaring global ambitions and in the national interests and requests of other Asian countries. Turkey, a stable ally of the West in NATO and a EU aspirant waiting patiently in the antechamber, is trying on the guise of a regional power ever more often. In the meantime, the need for taking into account the ever larger range of opinions quickly erodes the international institutions that emerged in the Cold War era. This is seen not just in the sphere of security: the United Nations efficiency has largely fallen victim to the first phase of the global geopolitical catastrophe of the 1990s. Third, the growing international weight of the new countries and attempts by the old-timers, who won the Cold War, to preserve the hard-won status quo bring back the conservative interpretations of such terms as “sovereignty” and “sovereign rights.” Not only the leaders of new-comers to world politics, or the United States, traditionally concerned about its sovereignty, but quite respectable heads of European states, too, start talking about the protection of national interests. Finally, military power is ever more frequently employed by major powers as a tool to address foreign policy issues. EU countries and the United States used force and threats to use force back at the time when they were getting their hands on the assets of the former USSR. However, they were faced with a very limited set of tasks then. It never occurred to anyone in the West to say in 1999 that the purpose of NATO’s operation against Yugoslavia was to force Slobodan Milosevic to resign or, still worse, to put him to death by some untraditional way of hanging. The need for using military force with or without reason merely confirms that the international community has no other means to prevent the emergence or escalation of conflicts.

#### States will always act in their own interests

Gray 7 (Colin S. Gray, Director of the Centre for Strategic Studies within the Department of Politics and International Relations at the University of Reading, 6/11/07, War, Peace, and International Relations, p. 277)

What is known with confidence about this most vital, yet variable, condition known as peace? Strategic history suggests strongly that peace cannot be constructed by means of institutional engineering. Such construction can be useful to polities that wish to use it. Institutions and procedures that facilitate communication, perhaps improve mutual understanding, and provide mechanisms for interstate arbitration have roles to play on behalf of order. But those roles will be fulfilled only when the political players are prepared to negotiate and compromise. There is nothing magically transformative about participation in international institutions. States, as well as other security communities that generally are not represented in the UN, frequently prefer to act unilaterally, or with allies, in defence of their vital interests. In most of those situations, international political architecture and its norms and procedures can be of only limited value for international order. The existence of the UN facilitates multinational efforts to contain, limit and even halt a war, should the belligerent parties agree to be contained, limited and prevented from fighting to a finish. The story was the same for the Concert System in the nineteenth century and the League of Nations in the twentieth. The functioning of such institutions must reflect their political contexts. They have been as helpful for international order as their leading members would permit. An international institution constructed to advance the prospects for good order and peace can be used or abused on behalf of disorder and war. States can behave in the UN in such a way as to block decisions for collective action to suppress disorderly behaviour. International institutions, with the UN as the prime example, cannot themselves contribute in a vital way to a more orderly world. Rather, they should be viewed as the faithful products of world order and disorder. States determined to cooperate will use the good offices and fora of those institutions. States determined upon conflict will use them as an arena for propaganda and coalition-building and, if need be, will employ their rules to paralyse the international community. Michael Howard explains why world peace cannot be constructed by the invention, or reform, of institutions: The establishment of a global peaceful order thus depends

on the creation of a world community sharing the characteristics that make possible domestic order, and this will require the widest possible diffusion of those characteristics by the societies that already possess them. World order cannot be created simply by building international institutions and organizations that do not arise naturally out of the cultural disposition and historical experience of their members. Their creation and operation require at the very least the existence of a transnational elite that not only shares the same cultural norms but can render those norms acceptable within their own societies and can where necessary persuade their colleagues to agree to the modifications necessary to make them acceptable. (Howard, 2001: 105) This is a fair summary of historical experience. Just as peace cannot be constructed by ingenious institution-building, nor can it be mandated by law, custom or norms. When obedience to those restraints is predicted to work towards results sharply contrary to states’ national interests, they will be ignored.

#### Multilateralism fails—*diverging interests* and a *lack of faith* guarantee cooperation is at best superficial

Heribert Dieter 14, Senior Associate at the German Institute for International and Security Affairs, Non-Resident Senior Fellow, Chongyang Institute for Financial Studies, Visiting Professor for International Political Economy at Zeppelin University, Doctorate in Political Science and Economics, Free University of Berlin, 1/31/14, The G-20 and the Dilemma of Asymmetric Sovereignty – Why Multilateralism Is Failing in Crisis Prevention, International Relations and Security Network, <http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?lng=en&id=176145>

Yet, tightening the rules for financial market regulation is not the only field where the G-20 is failing. Despite the mantra-like repetition of memoranda of understanding, the trade ministers of the G-20 have not been able to overcome their conflicts of interest and reach a settlement in the Doha Round of the World Trade Organization (WTO). What are the reasons for this failure?Although the G-20 managed to prevent a revival of protectionist measures on a broad front in the midst of the crisis, there is a large gap between the announcements of the G-20 and quantifiable results in trade policy. There is not one final communiqué that lacks a clear statement stressing the importance of the WTO and the necessity to conclude the Doha Round. Nonetheless, the reality of trade policy looks very different. All the states that are preventing the conclusion of the Doha Round through their vetoes are members of the G-20.

Despite there being little public information available on the reasons for the deadlock in the Doha Round, it is known that the US, Brazil, and China are blocking its conclusion. The emerging economies Brazil and China oppose the US’s demand for the complete elimination of tariffs on industrial goods. Conversely, the US resists the request to comprehensively abandon subsidies to the agricultural sector.Thus, the Doha Round is not concluded because three important members of the G-20 no longer believe in multilateral solutions and would rather engage in preferential agreements. For experts in the field of international trade, this is a paradox. There is a broad consensus that a single rulebook for international trade would facilitate economic growth and contribute to a worldwide increase in prosperity. This, however, cannot be said for the currently popular free trade agreements. So why are the countries in the G-20 incapable of further developing the common rules for international trade? One explanation is the lack of a hegemonic power that is willing to guarantee compliance with the rules of the game, but at the same time establish a system that provides member countries with sufficient economic benefits. In any event, this is how the postwar economy emerged: The US enforced the system of Bretton Woods and made sure that the participation in this economic regime remained attractive. Of course, the Bretton Woods regime never was a truly global system, since member countries of the Council on Mutual Economic Assistance did not participate. Still, within the bipolar order of the Cold War, the US managed to keep the system open and stable.¶ After the collapse of the USSR and the following short-lived “unipolar moment” (Charles Krauthammer) of complete hegemony of the US, the multilateral order was being advanced until 1995, the founding year of the WTO. Since the turn of the millennium and the parallel emergence of a multipolar order, nearly all attempts to organize cooperation without hegemony (Bob Keohane) have failed. The present multipolar world is characterized by superficial cooperation. Global Governance, whether in policies to prevent further climate change or in economic policy, remains on hold. Even worse: The world is returning to regulation on the level of the nation-state and non-cooperation. The American political scientist Ian Bremmer refers to the resulting situation as “G-Zero,” an era in which groups such as the G-20 will no longer play a vital role. The negative perception of the international division of labor¶ Apparently, there is no such thing as an identity of interests of individual states, as assumed by the advocates of global regulation and global governance. In other words: The gap between the preferences of individual states is widening rather than narrowing. However, governments must respect the preferences of their societies in the formulation of policies if they do not wish to lose legitimacy. Then again, the different preferences of societies are the immediate result of severely diverging perceptions of the international division of labor. Even in the G-20, individual societies have very different perceptions of the effects of globalization and its economic effects.¶ In Europe and the US, many people are increasingly critical of the international division of labor, if not outright hostile to globalization. According to a number of surveys, only about one-fifth to one-third of the respondents in OECD countries see greater opportunities than risks in globalization. Even in Germany, numerous politicians and citizens have been critical of globalization, although Germany strongly benefits from open markets and the resulting intensification of international trade.¶ Without a political anchoring in the member states, the G-20 has no future¶ The unfavorable perceptions of globalization and the outlined asymmetric sovereignty have resulted in a standstill in the G-20. Instead of a further development of the multilateral order, at best the status quo will be preserved. This is why we can expect nothing substantial – at least in terms of economic policy and financial regulation – from the G-20 summit in St. Petersburg on September 5 and 6. The structural impediments to successful financial regulation and trade policies on a supranational level cannot be overcome by the heads of government and state of the G-20. At least there is some hope in those areas where the countries of the G-20 have identical interests. This applies primarily to measures to close down tax loopholes. In 2008, ambitious expectations of a comprehensive reorganization of international trade relations through the G-20 were raised. Unfortunately, the G-20 cannot and will not deliver on crisis prevention. Today, more modest goals will have to be set. The key obstacle to success in the further development of global rules in trade and finance can be found in the G-20 societies themselves. Perceptions about globalization need to be addressed by policy makers at the national level, as do the widespread reservations about the international division of labor in the OECD countries. If societies continue to show diverging preferences, the development of comprehensive global economic governance in the G-20 will be all but impossible.