### T-SPEC

#### Interpretation: The affirmative may not specify a government and industry, The resolution states private exploration in outer space is unjust as a general principle.

#### Violation: they spec us mining

#### Standards:

#### 1] ground- the aff interp steals all neg ground, by not just specing a gov but a spec industry they make beig neg impossible as it shfts out of us innovation da, digital divid das, etc and limits us to only 1 da vs this aff skewing prep

#### 2] Limits – there are infinite governments that could be just – explodes limits since there are tons of independent affs plus functionally infinite combinations, all with different advantages in different political situations. Kills neg prep and debatability since there are no DAs that apply to every– means the aff is always more prepared and wins just for speccing.

#### 3] TVA – just read your aff as an advantage under a whole adv, solves your offense

#### Fairness – debate is a competitive activity that requires fairness for objective evaluation. Outweighs – it constrains your ability to evaluate the rest of the flow because they require fair evaluation.

#### Drop the debater – to deter future abuse and set better norms for debate.

#### Competing interps – reasonability is arbitrary and invites judge intervention but we creates a race to the top where we create the best norms for debate.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, logic outweighs since it’s a prerequisite for evaluating any other argument, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices

#### 1AR theory is dta and reasonability – sandbagging o/w, irresolvable o/w

### US Innovation da

#### The development of a private space industry is critical to American technological innovation

Zimmerman, 2017, ROBERT ZIMMERMAN is an awardwinning independent science journalist and historian who has written four books and innumerable articles on science, engineering, and the history of space exploration and technology for Science, Air & Space, Sky & Telescope, Astronomy, The Wall Street Journal, USA Today, and a host of other publications. He also reports on space, science, and culture on his website, http://behindtheblack.com. He does not work for any aerospace company and has never received any money from NASA for his reporting. His books include Leaving Earth: Space Stations, Rival Superpowers, and the Quest for Interplanetary Travel (Joseph Henry Press), which won the American Astronautical Society’s Eugene M. Emme Astronautical Literature Award in 2003 as that year’s best space history for the general public. He also has written Genesis: The Story of Apollo 8 (Mountain Lake Press) and The Universe in a Mirror: The Saga of the Hubble Space Telescope and the Visionaries Who Built It (Princeton University Press). In 2000 he was co-winner of the David N. Schramm Award, given by the High Energy Astrophysics Division of the American Astronomical Society for Science Journalism, for his essay in The Sciences, “There She Blows,” on the 35-year-old astronomical mystery of gamma ray bursts, CAPITALISM IN SPACE: Private Enterprise and Competition Reshape the Global Aerospace Launch Industry, https://s3.us-east-1.amazonaws.com/files.cnas.org/documents/CNAS-Report-CapitalismInSpace-Final.pdf?mtime=20170216144336&focal=none

Introduction **It is essential for any nation that wishes to thrive and compete on the world stage to have a successful and flourishing aerospace industry**, centered on the capability of putting humans and payloads into space affordably and frequently. This is a bipartisan position held by elected officials from both American political parties since the Soviet launch of the Sputnik satellite in 1957. The reasons for this are straightforward: • Military strength: For strategic reasons, the military must have the capability of launching satellites into orbit for the purpose of surveillance and reconnaissance. In addition, the country’s missile technology must be state-of-the-art to make this data gathering as effective as possible. A healthy aerospace industry is the only way to achieve both. • Natural resources: The resources in space – raw materials from asteroids and the planets as well as energy from the Sun – are there for the taking. Other nations are striving to obtain those resources and the wealth those assets will provide for their citizens. Without direct access to those resources, American society will have less opportunity for growth and prosperity, and the country will eventually fall behind as a major power. • Economic growth: **A thriving aerospace industry** helps fuel the U.S. economy. It **develops cutting-edge technology in fields such as computer design, materials research, and miniaturization that *drives innovation and invention in every other field****.* • National prestige: Even if the previous three reasons did not exist, the prestige of the United States requires that we remain competitive in the increasingly global race to explore and settle the solar system. If the United States doesn’t compete in this effort, future generations of Americans will be left behind as China, Russia, Europe, India, and an increasing number of other nations establish operations in space and permanent colonies on the Moon, Mars, and the asteroids. All of these goals require a prosperous U.S. aerospace industry, which in turn requires above all a viable space-launch industry, capable of placing payloads, both unmanned and manned, into orbit cheaply and efficiently. Unfortunately, since the beginning of the 21st century the **U.S. government has struggled to create and maintain a viable launch industr**y. Even as the government terminated the Space Shuttle program, with its ability to place and return humans and large cargoes to and from orbit, NASA’s many repeated efforts since the mid-1980s to generate a replacement have come up empty.1 In addition, in the 1990s the Department of Defense instituted a new program, the Evolved Expendable Launch Vehicle (EELV), to guarantee itself launch services that – though successful in procuring those services – have done so at a very high cost, so high, in fact, that the expense now significantly limits the military’s future options for maintaining its access to, and assets in, space. Even as the federal government struggled with this problem, **a fledgling crop of new American private launch companies have emerged in the past decade, funded initially by the vast profits produced by the newly born internet industry**. These new companies have not been motivated by national prestige, military strength, or any of the traditional national political goals of the federal government. Instead, **these private entities have been driven by profit, competition**, and in some cases the ideas of the visionary individuals running the companies, resulting in some remarkable success, achieved with relatively little money and in an astonishingly short period of time.

#### US is in the lead on geopolitical space mining. Only place where it is definitively ahead of China in the economic war it’s losing. The link is exacerbated as the aff decks the US current advantage and allows china to run ahead

**Gilbert**, A. (20**21**, **April 26**). Mining in Space Is Coming. Milken Institute Review. Retrieved December 16, 2021, from <https://www.milkenreview.org/articles/mining-in-space-is-coming> //ear Alex Gilbert, is a complex systems researcher and a PhD student in space resources at the Colorado School of Mines.

That said, there’s no grass growing under potential pioneers’ feet. Potential economic, scientific and even security benefits underlie an emerging [geopolitical competition](https://nationalinterest.org/feature/geostrategic-importance-outer-space-resources-154746) to pursue space mining. **The United States is rapidly emerging as a front-runner**, in part due to its ambitious Artemis Program to lead a multinational consortium back to the Moon**. But it is also a leader in creating a legal infrastructure for mineral exploitation**. **The United States has adopted the world’s first spaceresources law, recognizing the property rights of private companies and individuals to materials gathered in space.** However, the United States is hardly alone. Luxembourg and the United Arab Emirates (you read those right) are racing to codify space-resources laws of their own, hoping to attract investment to their entrepot nations with business-friendly legal frameworks. China reportedly views space-resource development as a national priority, part of a strategy to challenge U.S. economic and security primacy in space. Meanwhile, Russia, Japan, India and the European Space Agency all harbor space-mining ambitions of their own. Governing these emerging interests is an outdated treaty framework from the Cold War. Sooner rather than later, we’ll need [new agreements](https://issues.org/new-policies-needed-to-advance-space-mining/) to facilitate private investment and ensure international cooperation.

#### **US tech leadership prevents existential risk**

Ash Jain 19, senior fellow with the Scowcroft Center for Strategy and Security, where he oversees the Atlantic Council’s Democratic Order Initiative and D10 Strategy Forum; and Matthew Kroenig, deputy director for strategy in the Scowcroft Center for Strategy and Security and associate professor of government and foreign service at Georgetown University, 10/30/19, “Present at the Re-Creation: A Global Strategy for Revitalizing, Adapting, and Defending a Rules-Based International System,” <https://www.atlanticcouncil.org/wp-content/uploads/2019/10/Present-at-the-Recreation.pdf>

The system must also be adapted to deal with new issues that were not envisioned when the existing order was designed. Foremost among these issues is emerging and disruptive technology, including AI, additive manufacturing (or 3D printing), quantum computing, genetic engineering, robotics, directed energy, the Internet of things (IOT), 5G, space, cyber, and many others. Like other disruptive technologies before them, these innovations promise great benefits, but also carry serious downside risks. For example, AI is already resulting in massive efficiencies and cost savings in the private sector. Routine tasks and other more complicated jobs, such as radiology, are already being automated. In the future, autonomous weapons systems may go to war against each other as human soldiers remain out of harm’s way. Yet, AI is also transforming economies and societies, and generating new security challenges. Automation will lead to widespread unemployment. The final realization of driverless cars, for example, will put out of work millions of taxi, Uber, and long-haul truck drivers. Populist movements in the West have been driven by those disaffected by globalization and technology, and mass unemployment caused by automation will further grow those ranks and provide new fuel to grievance politics. Moreover, some fear that autonomous weapons systems will become “killer robots” that select and engage targets without human input, and could eventually turn on their creators, resulting in human extinction. The other technologies on this lisgt similarly balance great potential upside with great downside risk. 3D printing, for example, can be used to “make anything anywhere,” reducing costs for a wide range of manufactured goods and encouraging a return of local manufacturing industries.61 At the same time, advanced 3D printers can also be used by revisionist and rogue states to print component parts for advanced weapons systems or even WMD programs, spurring arms races and weapons proliferation.62 Genetic engineering can wipe out entire classes of disease through improved medicine, or wipe out entire classes of people through genetically engineered superbugs. Directed-energy missile defenses may defend against incoming missile attacks, while also undermining global strategic stability. Perhaps the greatest risk to global strategic stability from new technology, however, comes from the risk that revisionist autocracies may win the new tech arms race. Throughout history, states that have dominated the commanding heights of technological progress have also dominated international relations. The United States has been the world’s innovation leader from Edison’s light bulb to nuclear weapons and the Internet. Accordingly, stability has been maintained in Europe and Asia for decades because the United States and its democratic allies possessed a favorable economic and military balance of power in those key regions. Many believe, however, that China may now have the lead in the new technologies of the twenty-first century, including AI, quantum, 5G, hypersonic missiles, and others. If China succeeds in mastering the technologies of the future before the democratic core, then this could lead to a drastic and rapid shift in the balance of power, upsetting global strategic stability, and the call for a democratic- led, rules-based system outlined in these pages.63

#### Tech leadership is uniquely key to attain global leadership,

Heath and Thompson 18 - \*Senior International and Defense Analyst at the RAND Corporation; \*\*Professor of Political Science, Indiana University (\*Timothy R. Heath, \*\*William R. Thompson; Asia Policy, Volume 13, Number 2, April 2018, National Bureau of Asian Research; “Avoiding U.S.-China Competition Is Futile: Why the Best Option Is to Manage Strategic Rivalry; pgs. 104-107)

A half century of social science on precedents in which rising powers competed with system leaders underscores the importance of the quality of economic leadership—evaluated primarily in terms of dominance in technology and energy—over quantity of economic output or other variables.43 Why is technological predominance so important? The first, most fundamental reason is that long-term economic growth is predicated on generating radical new technologies (new products, methods of production, markets, trade routes, fuel sources, and commercial organizations à la Joseph Schumpeter's intermittent bouts of creative destruction). Whichever economy masters these new technologies first profits most from its pioneering innovations. In due time, the world economy's leading innovator is likely to extend its lead to commercial, financial, and military areas as well. [End Page 105] Ultimately the leading economy can shape the global economy according to its own preferences and advantage.

Second, mastering surges in new technologies thus means that the leading economy—i.e., the country with the most technologically innovative economy—maintains the most competitive and lucrative position in the global economy. But it also means that technological superiority is transferred between the military and civilian economies. Gains made in military technology can be transferred to the civilian economy, and gains made in the civilian economy can be transferred to military technology. Examples of the former may be seen in the transfer of radar technology from the military to the civilian sector, while an example of the latter can be seen in the way basic research at universities has traditionally fueled advances in weapons technologies. The country with the leading economy thus is well positioned to also field the most technologically advanced military. As a consequence, it is likely to develop a command of the global commons and, for a period of time, unrivaled global reach.

Third, technological predominance generates huge economic gains because corporations in the leading economy are set up to dominate new markets in the new industries. The expansion of commercial activity abroad to exploit new markets means that technological leaders profit enormously from a functioning and stable world economy, and are thus well positioned to provide global military and political leadership. A vivid example of this may be seen in the expansion of U.S. multinational corporations in the twentieth century, which fueled the need for a large military force that could police trade routes and the global commons to keep the world economy operating as smoothly as possible. The global presence of U.S. companies and military forces provided a strong incentive for U.S. leaders to focus on solving global issues. It also encouraged countries around the world to look to the United States as a leader, since it alone had the resources and reach to address global problems.

Finally, a fourth reason technological predominance matters is that it fuels the soft power that makes the leading economy attractive. People around the world tend to admire and emulate the wonders of new technology as manifested in a vibrant and sophisticated economy. The media reinforces the appeal of the leading economy by delivering messages about how citizens in that country employ new technologies to enhance their quality of life. The technological superiority of the leading economy also yields soft power because the country's political and military advantages allow it to exercise influence at levels unattainable by other countries. Technological predominance cannot [End Page 106] deliver legitimacy, however, and thus a country with attractive political and cultural values and ideals will be better positioned to maintain its influence than one that relies heavily on coercion, such as today's authoritarian China. But the main point remains: technological predominance opens opportunities for a country to increase its soft power.

The importance of technological leadership means that the popular focus on the quantity of China's economic output as the key index of national power is in many ways insufficient. China, after all, had the world's largest economy in the 1700s and 1800s, but its relatively low level of technology and energy consumption left it at the mercy of much smaller Western countries that possessed more dynamic economies, fossil fuel-driven energy, and powerful militaries. The United States, by contrast, built its post–World War II global primacy on the foundation of an impressive technological-energy prowess. The accelerated rate of technology transfer and energy consumption in the 21st century, however, has considerably weakened this lead.44 Asia, in particular, has made rapid gains that pose a challenge to U.S. technological leadership.45 For now, despite impressive economic and technological gains, China continues to lag behind the United States. Per capita GDP is regarded as an indicator of the level of technological achievement (albeit an imperfect one), and as of 2014 the United States' per capita GDP was more than eight times that of China.46 But Chinese officials have made technological leadership a key policy priority and are investing enormous sums of time and money accordingly. The result is that analysts now debate whether China could at some point surpass the United States to become the world leader in technological innovation.47 [End Page 107]

#### Failure to beat China in tech incentivizes escalatory nuclear postures that make extinction inevitable

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Matthew Kroenig and Bharath Gopalaswamy, "Will disruptive technology cause nuclear war?," Bulletin of the Atomic Scientists, 11-12-2018, <https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/>

Rather, we should think **more broadly** about how new technology might affect global politics, and, for this, it is helpful to turn to scholarly international relations theory. The dominant theory of the causes of war in the academy is the “bargaining model of war.” This theory identifies rapid shifts in the balance of power as a primary cause of conflict. International politics often presents states with conflicts that they can settle through peaceful bargaining, but when bargaining breaks down, war results. Shifts in the balance of power are problematic because they undermine effective bargaining. After all, why agree to a deal today if your bargaining position will be stronger tomorrow? And, a clear understanding of the military balance of power can contribute to peace. (Why start a war you are likely to lose?) But shifts in the balance of power muddy understandings of which states have the advantage. You may see where this is going. New technologies threaten to create potentially destabilizing shifts in the balance of power. For decades, stability in Europe and Asia has been supported by US military power. In recent years, however, the balance of power in Asia has begun to shift, as China has increased its military capabilities. Already, Beijing has become more assertive in the region, claiming contested territory in the South China Sea. And the results of Russia’s military modernization have been on full displayin its ongoing intervention in Ukraine. Moreover, China may have the lead over the United States in emerging technologies that could be decisive for the future of military acquisitions and warfare, including 3D printing, hypersonic missiles, quantum computing, 5G wireless connectivity, and artificial intelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, “Whoever leads in AI will rule the world.” If China or Russia are able to incorporate new technologies into their militaries before the United States, then this could lead to the kind of rapid shift in the balance of power that often causes war. If Beijing believes emerging technologies provide it with a newfound, local military advantage over the United States, for example, it may be more willing than previously to initiate conflict over Taiwan. And if Putin thinks new tech has strengthened his hand, he may be more tempted to launch a Ukraine-style invasion of a NATO member. Either scenario could bring these nuclear powers into direct conflict with the United States, and once nuclear armed states are at war, there is an inherent risk of nuclear conflict through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation. This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to preserve prevailing power balances more broadly. When it comes to new technology, this means that the United States should seek to maintain an innovation edge. Washington should also work with other states, including its nuclear-armed rivals, to develop a new set of arms control and nonproliferation agreements and export controls to deny these newer and potentially destabilizing technologies to potentially hostile states. These are no easy tasks, but the consequences of Washington losing the race for technological superiority to its autocratic challengers just might mean nuclear Armageddon.

**US Unipolarity is sustainable and creates a structural disincentive for great power war and escalation — independently causes cascading prolif and extinction**

**Brands 15** (Hal Brands. **,** History PhD Yale PhD. he’s on the faculty at the Sanford School of Public Policy at Duke University, The Elliott School of International Affairs, The Washington Quarterly, Summer 2015 38:2 pp. 7–28)

The fundamental reason is that **both U.S. influence and international stability are thoroughly interwoven** with a robust U.S. forward presence. Regarding influence, the protection that Washington has afforded its allies has equally afforded the United States great sway over those allies’ policies.43 During the Cold War and after, for instance, **the United States has used the influence provided by its security posture to veto allies’ pursuit of nuclear weapons, to obtain more advantageous terms in financial and trade agreements,** and even to affect the composition of allied nations’ governments.44 More broadly, it has used its alliances as vehicles for shaping political, security, and economic agendas in key regions and bilateral relationships, thus giving the United States an outsized voice on a range of important issues. To be clear, this influence has never been as pervasive as U.S. officials might like, or as some observers might imagine. But by any reasonable standard of comparison, it has nonetheless been remarkable.

One can tell a similar story about the relative stability of the post-war order. As even some leading offshore balancers have acknowledged, **the lack of conflict in regions like Europe in recent decades is not something that has occurred naturally. It has occurred because the “American pacifier” has suppressed precisely the dynamics that previously fostered geopolitical turmoil.** That pacifier has limited arms races and security competitions by providing the protection that allows other countries to under-build their militaries. **It has soothed historical rivalries** by affording a climate of security in which powerful countries like Germany and Japan could be revived economically and reintegrated into thriving and fairly cooperative regional orders. It has induced caution in the behavior of allies and adversaries alike, deterring aggression and dissuading other destabilizing behavior. As John Mearsheimer has noted, the United States “effectively acts as a night watchman,” lending order to an otherwise disorderly and anarchical environment.45

**What would happen if Washington backed away from this role? The most logical answer is that both U.S. influence and global stability would suffer. With respect to influence, the United States would effectively be surrendering the most powerful bargaining chip it has traditionally wielded in dealing with friends and allies, and jeopardizing the position of leadership it has** used to shape bilateral and regional agendas for decades. The consequences would seem no less damaging where stability is concerned. As offshore balancers have argued, it may be that U.S. retrenchment would force local powers to spend more on defense, while perhaps assuaging certain points of friction with countries that feel threatened or encircled by U.S. presence. But it equally stands to reason that **removing the American pacifier would liberate the more destabilizing influences that U.S. policy had previously stifled. Long-dormant security competitions might reawaken as countries armed themselves more vigorously; historical antagonisms between old rivals might reemerge** in the absence of a robust U.S. presence and the reassurance it provides. Moreover, **countries that seek to revise existing regional orders in their favor [.]—think Russia in Europe, or China in Asia—might indeed applaud U.S. retrenchment, but they might just as plausibly feel empowered to more assertively press their interests**. If the United States has been a kind of Leviathan in key regions, Mearsheimer acknowledges, then “take away that Leviathan and there is likely to be big trouble.”46

Scanning the global horizon today, one can easily see where such trouble might arise. In Europe, a revisionist Russia is already destabilizing its neighbors and contesting the post-Cold War settlement in the region. In the Gulf and broader Middle East, the threat of Iranian ascendancy has stoked region-wide tensions manifesting in proxy wars and hints of an incipient arms race, even as that region also contends with a severe threat to its stability in the form of the Islamic State. In East Asia, a rising China is challenging the regional status quo in numerous ways, sounding alarms among its neighbors—many of whom also have historical grievances against each other. In these circumstances, removing the American pacifier would likely yield not low-cost stability, but increased conflict and upheaval.

That conflict and upheaval, in turn, would be quite damaging to U.S. interests even if it did not result in the nightmare scenario of a hostile power dominating a key region. It is hard to imagine, for instance, that increased instability and acrimony would produce the robust multilateral cooperation necessary to deal with transnational threats from pandemics to piracy. More problematic still might be the economic consequences. As scholars like Michael Mandelbaum have argued, the enormous progress toward global prosperity and integration that has occurred since World War II (and now the Cold War) has come in the climate of relative stability and security provided largely by the United States.47 One simply cannot confidently predict that this progress would endure amid escalating geopolitical competition in regions of enormous importance to the world economy.

Perhaps the greatest risk that a strategy of offshore balancing would run, of course, is that a key region might not be able to maintain its own balance following U.S. retrenchment. That prospect might have seemed far-fetched in the early post-Cold War era, and it remains unlikely in the immediate future. But in East Asia particularly, the rise and growing assertiveness of China has highlighted the medium- to long-term danger that a hostile power could in fact gain regional primacy. If China’s economy continues to grow rapidly, and if Beijing continues to increase military spending by 10 percent or more each year, then its neighbors will ultimately face grave challenges in containing Chinese power even if they join forces in that endeavor. This possibility, ironically, is one to which leading advocates of retrenchment have been attuned. “The United States will have to play a key role in countering China,” Mearshimer writes, “because its Asian neighbors are not strong enough to do it by themselves.”48

If this is true, however, then offshore balancing becomes a dangerous and potentially self-defeating strategy. As mentioned above, it could lead countries like Japan and South Korea to seek nuclear weapons, thereby stoking arms races and elevating regional tensions. Alternatively, and perhaps more worryingly, it might encourage the scenario that offshore balancers seek to avoid, by easing China’s ascent to regional hegemony. As Robert Gilpin has written, “Retrenchment by its very nature is an indication of relative weakness and declining power, and thus retrenchment can have a deteriorating effect on relations with allies and rivals.”49 In East Asia today, U.S. allies rely on U.S. reassurance to navigate increasingly fraught relationships with a more assertive China precisely because they understand that they will have great trouble balancing Beijing on their own. A significant U.S. retrenchment might therefore tempt these countries to acquiesce to, or bandwagon with, a rising China if they felt that prospects for successful resistance were diminishing as the United States retreated.50 In the same vein, retrenchment would compromise alliance relationships, basing agreements, and other assets that might help Washington check Chinese power in the first place—and that would allow the United States to surge additional forces into theater in a crisis. In sum, if one expects that Asian countries will be unable to counter China themselves, then reducing U.S. influence and leverage in the region is a curious policy. Offshore balancing might promise to preserve a stable and advantageous environment while reducing U.S. burdens. But upon closer analysis, the probable outcomes of the strategy seem more perilous and destabilizing than its proponents acknowledge.