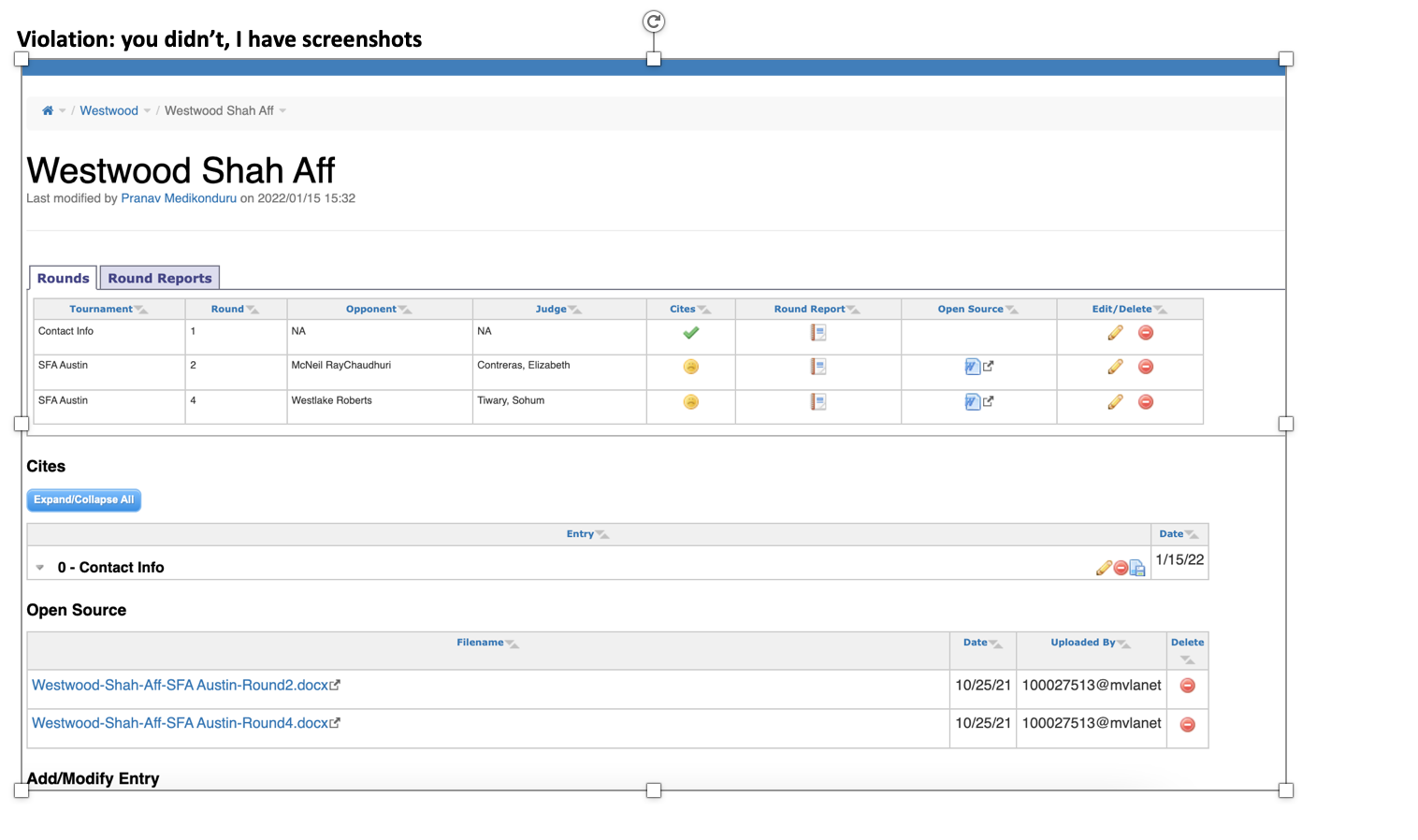
## 1NC



### 1NC Shell

#### Interpretation: Debaters must disclose all positions they have read open sourced on the 2021-2022 NDCA wiki.

#### Violation: you didn’t, I have screenshots

#### 

#### Net benefits:

#### Education

#### Evidence Quality – Disclosure creates a public information database which streamlines case writing and encourages debaters to find the best evidence on the topic.

#### Incentivizes Research – Disclosure allows debaters to craft specific responses to their opponent’s positions which promotes deep discussion.

#### **Argument Responsibility – Disclosure discourages cheap shot strategies which rely on obfuscation to win rounds.**

#### **Evidence Ethics** – Open source disclosure allows debaters to ensure that evidence has been accurately tagged and cut.

#### Accessibility

#### Resource Inequality – Full text disclosure puts everyone on an equal playing field by ensuring that debaters with fewer resources can still access evidence cut from expensive online libraries and databases.

#### Prep Burden – Larger schools have the ability to scout more rounds at tournaments by virtue of the fact that they have larger teams and more connections on the circuit. Disclosure solves because it gives everyone access to the same intelligence.

#### Rule following good— Debate needs rules to function. This tournament has decided that disclosure is one of those rules and arbitrarily breaking it is bad and destroys fairness.

#### Paradigm issues:

#### Drop the debater – their abusive advocacy skewed the debate from the start

#### Comes before 1AR theory – NC abuse is responsive to them not being topical

#### Competing interps – reasonability invites arbitrary judge intervention and a race to the bottom of questionable argumentation

#### No RVIs – fairness and education are a priori burdens – and encourages baiting – outweighs because if T is frivolous, they can beat it quickly

#### Fairness is a voter ­– necessary to determine the better debater

#### Education is a voter – why schools fund debate

## Case

#### India space participation is crucial to India’s soft power – independently Indian norm setting curbs Chinese militarization

Castro ’17. [Bhavani Castro Fellow of Indian Studies at the Getulio Vargas Foundation in São Paulo, 03-03-2017, "Why India Should Help Shape Norms for Outer Space Activities," The Diplomat, <https://thediplomat.com/2017/03/why-india-should-help-shape-norms-for-outer-space-activities/>] TDI

The past years have been groundbreaking for the Indian Space Program. In 2014, its first interplanetary mission, Mangalyaan, entered into Mars orbit, putting the Indian Space Research Organization (ISRO) into the select group of space agencies to reach Mars, and the first one to succeed entering its orbit in the first attempt. In 2015, the agency launched its first space observatory, Astrosat, aimed to observe distant planets and astronomical objects, a first-class technology mastered by few countries. Last year, India also set a record by launching 20 satellites at once, many from other countries. However, India could go one step further in the space business and engage in a much more rewarding activity for its ambitions: taking the lead in shaping norms for outer space activities.

As the ISRO achieved a new world record in February – the launching of 104 satellites on a single rocket – Prime Minister Narendra Modi should consider giving new focus to the diplomacy surrounding the use of space. India has not been very active in the ongoing international efforts to update the outer space regime. It has not supported the European Union’s proposal for a Code of Conduct for Outer Space Activities, and it also watched silently while China and Russia joined efforts to issue a draft for a treaty on the prevention of the placement of weapons in outer space. However, if India aims for greater recognition in the international scenario, it is about time to take a more proactive stance on the creation of new norms and rules in global governance.

The existing international space regime includes several outdated treaties – mainly the Outer Space Treaty from 1967 and the Moon Treaty from 1979. These documents do not deal with urgent issues for today’s space exploration, including the prohibition of non-nuclear weapons tests in space and the creation of risky debris from the destruction of old satellites. The entrance of new actors, specifically in the space communications industry, makes it increasingly difficult to coordinate the positioning of new satellites in an already overcrowded orbit. Moreover, it is still unknown how those new actors – including China and India – will behave in space: whether they will choose to follow the peaceful use of space, or whether militarization will be their path.

It is crucial for India to work actively for new norms in the current scenario because of a variety of reasons. First, India needs to consider its national security interests. The vacuum created by the slow growth of the US and Russia on space capabilities is being filled by China, whose intentions are not entirely clear. In 2007, Beijing launched an anti-satellite weapon (ASAT) to destroy an old satellite. This move, not previously notified to the international community, not only produced thousands of harmful debris in orbit, but also evidenced China’s growing military capacity. If India wants to curb potentially harmful Chinese activities in outer space, it needs to endorse rules that fit its national interests.

India also needs to promote the regulation of space activities to enhance its cooperation with other space-faring nations – possibly including China, if the two countries decide for cooperation instead of competition. Vital sectors of the economy, as finance and communications, are dependent on space technologies, which makes cooperation essential for countries in a globalized world. India is proud of the indigeneity of its space technology, but it is about time to engage in technology sharing and commercial agreements with other countries. Space technologies are economic stimulants and useful tools in communication, resource management, and disaster prevention activities, all of which are essential assets for emerging economies like India.

More importantly, engaging in and committing to the creation of a new space governance framework would project India as an agenda-setter in a field of increasing importance for international relations. As in other realms of global governance, the future of space research is in the hands of Asia.

India can promote the creation of a more comprehensive regime for the use of outer space in a variety of ways. It is possible, for example, to start discussions within organizations like the BRICS (Brazil, Russia, India, China, and South Africa), IBSA (India, Brazil, South Africa), and the Shanghai Cooperation Organization. India can also actively engage with existing forums, such as the UN Committee on the Peaceful Use of Outer Space and ongoing discussions held by the European Union on the creation of a code of conduct.

The Outer Space Treaty will be celebrating its 50th anniversary this year; 2017 might be a good year for India to start an active campaign for an upgrade in the space regime. It might be difficult for India to build a new international institution or create legally binding treaties, but it can work on the promotion and creation of new conventions, cooperation agreements, and consensual norms.

#### Private sector key warrant is in the aff—

#### China is ramping up aggression in outer space

Broad 21 [(William J, is a science journalist and senior writer.) "How Space Became the Next ‘Great Power’ Contest Between the U.S. and China," 1-24-2021 updated 5-6-2018, https://www.nytimes.com/2021/01/24/us/politics/trump-biden-pentagon-space-missiles-satellite.html] TDI

For years, the Chinese studied — with growing anxiety — the American military, especially its invasions of Afghanistan in 2001 and Iraq in 2003. The battlefield successes were seen as rooted in space dominance. Planners noted that thousands of satellite-guided bombs and cruise missiles had rained down with devastating precision on Taliban forces and Iraqi defenses.

While the Pentagon’s edge in orbital assets was clearly a threat to China, planners argued that it might also represent a liability.

“They saw how the U.S. projected power,” said Todd Harrison, a space analyst at the Center for Strategic and International Studies, a Washington think tank. “And they saw that it was largely undefended.”

China began its antisatellite tests in 2005. It fired two missiles in two years and then made headlines in 2007 by shattering a derelict weather satellite. There was no explosion. The inert warhead simply smashed into the satellite at blinding speed. The successful test reverberated globally because it was the first such act of destruction since the Cold War.

The whirling shards, more than 150,000 in all, threatened satellites as well as the International Space Station. Ground controllers raced to move dozens of spacecraft and astronauts out of harm’s way.

The Bush administration initially did little. Then, in a show of force meant to send Beijing a message, in 2008, it fired a sophisticated missile to shoot down one of its own satellites.

Beijing conducted about a dozen more tests, including ones in which warheads shot much higher, in theory putting most classes of American spacecraft at risk.

China also sought to diversify its antisatellite force. A warhead could take hours to reach a high orbit, potentially giving American forces time for evasive or retaliatory action. Moreover, the speeding debris from a successful attack might endanger Beijing’s own spacecraft.

In tests, China began firing weak laser beams at satellites and studying other ways to strike at the speed of light. However, all the techniques were judged as requiring years and perhaps decades of development.

Then came the new idea. Every aspect of American space power was controlled from the ground by powerful computers. If penetrated, the brains of Washington’s space fleets might be degraded or destroyed. Such attacks, compared with every other antisatellite move, were also remarkably inexpensive.

In 2005, China began to incorporate cyberattacks into its military exercises, primarily in first strikes against enemy networks. Increasingly, its military doctrine called for ~~paralyzing~~ early attacks.

In 2008, hackers seized control of a civilian imaging satellite named Terra that orbited low, like the military’s reconnaissance craft. They did so twice — first in June and again in October — roaming control circuits with seeming impunity. Remarkably, in both cases, the hackers achieved all the necessary steps to command the spacecraft but refrained from doing so, apparently to reduce their fingerprints.

#### Chinese aggression makes escalation inevitable – draws in other powers

Fabian 19 [Christopher David Fabian, Bachelor of Science, United States Air Force Academy. (“A Neoclassical Realist’s Analysis Of Sino-U.S. Space Policy”, *University of North Dakota Scholarly Commons*, January, Available Online at: <https://commons.und.edu/cgi/viewcontent.cgi?article=3456&context=theses>]

Second, Chinese strikes on U.S. space assets must not result in uncontrolled escalation. The advantage of possessing soft-kill technology is the suitability for low-intensity conflicts, while the use of destructive/non-reversible attacks will not be constrained during high-intensity conflicts.234 The use of exclusively non-lethal versus a combination of lethal and non-lethal capabilities can serve as strategic signaling about the phase of combat. However, due to a capability and vulnerability gap, combined with a lack of credible retaliatory threat, a tit-for-tat strategy along a clearly defined escalation ladder may not be a legitimate strategy for the Sino-U.S. relationship. 235 Counterspace action intended to have a tactical/operational effect may cross American strategic red lines, resulting in unintended escalation. For example, an attack on American overhead persistent infrared (OPIR) sensors would degrade their capability to detect conventional medium range ballistic missiles, with targets in the first island chain also interfering with the early detection of nuclear capable ICBMs launched against the U.S.236 Concerningly enough, there is evidence that the implication of interfering with or destroying strategically important U.S. capabilities has only been appreciated on the tactical and operational levels within the Chinese military.

237 Similarly, a Chinese attack on U.S. space systems at the outset of a low-grade conflict could raise the likelihood of a “space Pearl Harbor,” which could, in turn, provoke the United States to contemplate pre-emptive attacks or horizontal escalation on the Chinese mainland.238 In addition, commercial-military integration and combined efforts may result in escalation with third parties. A significant portion of U.S. military communication and imaging capabilities are purchased from commercial companies or provided by allied nations, meaning that to adequately degrade U.S. military capabilities, an attack on non-military and/or non-U.S. assets is required.

### US-India Alliance

#### The US – Indian alliance changed posturing towards climate change - Paris proves

Tellis 18 [(Ashley J, the Tata Chair for Strategic Affairs and is a senior fellow at the Carnegie Endowment for International Peace, specializing in international security and U.S. foreign and defense policy with a special focus on Asia and the Indian subcontinent.) “Narendra Modi and U.S.–India Relations” Carnegie Endowment for International Peace, 11/1/2018] BC

While these changes in Modi’s approach to foreign policy may appear to be stylistic, they have yielded important substantive successes. Two examples in widely different areas prove the point. The first is in the area of climate change. There is little doubt that the US and India played pivotal roles in the discussions leading up to the Paris Agreement. Prime Minister Modi, recognising the significance of securing an international consensus on mitigating climate change, pushed back against many in his own country to commit India to concrete pledges that made the final compact possible.

Modi’s willingness to accept India’s global responsibilities in mitigating climate change was equally vital to success in the lead-up to Paris: a concession unimaginable under India’s tradition of ‘Third World’ posturing, which would have prevented it from accepting the obligations that finally made an international accord possible.17 The fact that this climate accord is now endangered as a result of President Trump’s policies does not in any way undermine the conclusion that Modi’s approach to US–India relations yielded important gains for India at a time when New Delhi could have all too easily become the object of unremitting international pressure.

The second example of remarkable success has been India’s cooperation with the US in shaping the security environment in the Indo-Pacific. While this term has taken on new life under President Trump, the defining agreement between the US and India occurred under President Obama. Prime Minister Modi’s active involvement in shaping the ‘US–India Joint Strategic Vision for the Asia-Pacific and the Indian Ocean Region’ was couched in innocuous language, but its import was momentous.18 India did not simply reaffirm its commitment to the freedom of navigation and overflight—especially in the South China Sea where the threats from China are particularly acute—but it declared its willingness to contribute towards larger diplomatic and regional integration in order to ‘bolster long-term peace and prosperity for all’.

#### India will play a critical part of the emerging trend in global emissions

Slater 6/20 [(Joanna, Smith College, B ; Columbia University, MA in International Affairs and MS in Journalism) “Can India chart a low-carbon future? The world might depend on it,” 6-12-20, Washington Post] RR

It’s a small leap forward in a much longer race. As the world confronts a changing climate, India is a crucial unknown, and its decisions could either doom efforts to curb greenhouse gas emissions — or jump-start them.

Daily emissions worldwide decreased by as much as 17 percent during the coronavirus pandemic, scientists say, as economies staggered under the impact of lockdowns and stay-at-home orders. But experts believe that such effects on emissions are likely to be short-lived.

India’s lockdown — one of the world’s most stringent — crushed economic activity in this nation of more than 1.3 billion people. By one estimate, India’s carbon dioxide emissions fell by 30 percent in April compared with the same month in 2019, according to analysts at the website Carbon Brief. Pollution also fell dramatically, bringing blue skies to New Delhi, notorious for its bad air.

The shutdown is now easing. While the restrictions carried a steep human and economic cost, they also suggested the possibility of a different future. India is expected to become the most-populous country in the world by 2027. It is also a nation that intends to make major leaps in its development in the coming decades. Achieving such leaps will require considerably more energy than India currently consumes.

About 7,000 electric rickshaws are registered with authorities in Ranchi, India. (Saumya Khandelwal for The Washington Post)

How India generates that energy will have global repercussions. India’s challenge is to become a more prosperous country “without putting out enough carbon to break the world,” said Ajay Mathur, a former Indian climate negotiator and a member of Indian Prime Minister Narendra Modi’s council on climate change.

India is now the planet’s third-largest emitter of carbon dioxide, although it is still well behind China, the world’s largest emitter, and the United States. Measured per person, however, India’s emissions are ranked 140th in the world (the United States is 14th and China is 48th).

But India’s emissions are set to rise in the years ahead as economic growth propels demand for energy. The latest estimates indicate that emissions in India grew 1.8 percent in 2019. That’s a much slower pace than in 2018, although much of the deceleration was due to a sluggish economy. Coal will also remain a major part of India’s power sector in the coming decades, and the country is still building coal-fired plants.

Today about 1.75 million electric rickshaws ply India's roads. (Saumya Khandelwal for The Washington Post)

India will be “a critically important part of the emerging trend in global emissions,” said Andrew Light, a senior climate negotiator for the United States under the Obama administration. Not only is India one of the world’s largest and fastest-growing emitters, he said, but it also faces acute vulnerabilities from a changing climate, including rising sea levels, melting glaciers and extreme weather events.

So far, no country has managed to lift itself out of poverty without a concomitant surge in emissions. China’s spectacular economic rise, for example, led to an explosive jump in its carbon emissions.

How India compares with the world’s biggest carbon emitters

China’s emissions and wealth have grown rapidly, but emissions have recently leveled off.

6 metric tons of carbon

dioxide per person

HIGHER EMISSIONS PER PERSON

India’s emissions are growing steadily, but they are lower for the size of its economy than China’s.

U.S. emissions far outpace those of developing countries

Over the past two decades, the United States has managed to grow its economy without growing emissions.

Sources: Global Carbon Project, United Nations. (John Muyskens/The Washington Post)

“When people think of India, they have the shadow of China in their minds,” said Navroz Dubash, an expert on climate change at the Center for Policy Research in New Delhi. “People think, ‘Oh my goodness, India might do the same thing,’ ” he said. “If you think [India] will be a China repeat, it’s a fearful story. But it’s actually a huge opportunity.”

Indeed, India is the only major country in the world where actions to combat emissions are compatible with the goal of limiting global warming to an average of 2 degrees Celsius (3.6 degrees Fahrenheit), according to Climate Action Tracker, a joint initiative by two climate research organizations based in Germany. By contrast, the group says that China’s actions are “highly insufficient” with respect to that goal, while those of the United States are worse — it deems them “critically insufficient.”

In the coming years, India will need policies that not only lower pollution and carbon emissions but also create jobs for its growing workforce. In that regard, the spread of electric rickshaws is instructive. While India has struggled to increase the number of electric cars on the roads, battery-powered rickshaws have flourished with little help from the government and without any kind of charging infrastructure.

Unlike in the United States, where the transportation sector is the largest single contributor to emissions, in India the sector accounts for about a tenth of the total.

But its contribution is growing quickly as vehicle ownership expands. A government target of having 30 percent of vehicles running on battery power by 2030 appears out of reach, because such vehicles currently account for only a small fraction of new sales.

The steering component of an e-rickshaw, left, and tools, right. (Saumya Khandelwal for The Washington Post)

Meanwhile, Indian officials say they will meet two major pledges under the Paris agreement on climate change ahead of schedule. India has promised to ensure that 40 percent of its electricity-generation capacity comes from non-fossil fuel sources by 2030. It will also reduce its “emissions intensity” — a ratio of total emissions to gross domestic product — by at least one-third compared with 2005 levels. India has increased its solar-energy capacity more than twelvefold since 2014 and launched initiatives to save electricity.

That has put the two Paris pledges within reach. “We are now at the stage where much, much to our surprise, we may reach both of these goals well before 2030, possibly in early 2020s,” Mathur said. “The question can also be asked: Should India’s targets have been more? But in 2015, nobody would have committed to that.”

In 2017, President Trump announced that he was withdrawing the United States from the Paris climate agreement, a move that nullified the country’s commitment to cut emissions. China, meanwhile, made two major pledges under the accord, vowing to reduce its emissions intensity by at least 60 percent by 2030 and to generate 20 percent of its power from non-fossil fuels.

Some experts say that India can and must do more. “We should increase our ambition,” said Chandra Bhushan, a noted environmentalist. If the economics are right, he adds, India even has a chance to jump ahead to low-carbon, energy-efficient technologies.

**Warming causes extinction – any reduction should be prioritized above every other impact**

**Ramanathan et al. 17** [Veerabhadran Ramanathan is Victor Alderson Professor of Applied Ocean Sciences and director of the Center for Atmospheric Sciences at the Scripps Institution of Oceanography, University of California, San Diego, Dr. William Collins is an internationally recognized expert in climate modeling and climate change science. He is the Director of the Climate and Ecosystem Sciences Division (CESD) for the Earth and Environmental Sciences Area (EESA) at the Lawrence Berkeley National Laboratory (LBNL), Prof. Dr Mark Lawrence, Ph.D. is scientific director at the Institute for Advanced Sustainability Studies (IASS) in Potsdam, Örjan Gustafsson is a Professor in the Department of Environmental Science and Analytic Chemistry at Stockholm University, Shichang Kang is Professor, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences (CAS); CAS Center for Excellence in Tibetan Plateau Earth Sciences, and Molina, M.J., Zaelke, D., Borgford-Parnell, N., Xu, Y., Alex, K., Auffhammer, M., Bledsoe, P., Croes, B., Forman, F., Haines, A., Harnish, R., Jacobson, M.Z., Lawrence, M., Leloup, D., Lenton, T., Morehouse, T., Munk, W., Picolotti, R., Prather, K., Raga, G., Rignot, E., Shindell, D., Singh, A.K., Steiner, A., Thiemens, M., Titley, D.W., Tucker, M.E., Tripathi, S., & Victor, D., authors come from the following 9 countries - US, Switzerland, Sweden, UK, China, Germany, Australia, Mexico, India, “Well Under 2 Degrees Celsius: Fast Action Policies to Protect People and the Planet from Extreme Climate Change,” Report of the Committee to Prevent Extreme Climate Change, September 2017, http://www.igsd.org/wp-content/uploads/2017/09/Well-Under-2-Degrees-Celsius-Report-2017.pdf] TDI

**Climate change is becoming an existential threat with warming in excess of 2°C within the next three decades and 4°C to 6°C within the next several decades. Warming of such magnitudes will expose as many as 75% of the world’s population to deadly heat stress in addition to disrupting the climate and weather worldwide. Climate change is an urgent problem requiring urgent solutions**. This paper lays out urgent and **practical solutions that are ready for implementation now, will deliver benefits in the next few critical decades**, and places the world on a path to achieving the longterm targets of the Paris Agreement and near-term sustainable development goals. The approach consists of four building blocks and 3 levers to implement ten scalable solutions described in this report by a team of climate scientists, policy makers, social and behavioral scientists, political scientists, legal experts, diplomats, and military experts from around the world. These solutions will enable society to decarbonize the global energy system by 2050 through efficiency and renewables, drastically reduce short-lived climate pollutants, and stabilize the climate well below 2°C both in the near term (before 2050) and in the long term (post 2050). It will also reduce premature mortalities by tens of millions by 2050. As an insurance against policy lapses, mitigation delays and faster than projected climate changes, the solutions include an Atmospheric Carbon Extraction lever to remove CO2 from the air. The amount of CO2 that must be removed ranges from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons if the carbon lever is not pulled and emissions of climate pollutants continue to increase until 2030.

There are numerous living laboratories including 53 cities, many universities around the world, the state of California, and the nation of Sweden, who have embarked on a carbon neutral pathway. These laboratories have already created 8 million jobs in the clean energy industry; they have also shown that **emissions of greenhouse gases and air pollutants can be decoupled from economic growth**. Another favorable sign is that **growth rates of worldwide carbon emissions have reduced from 2.9% per year during the first decade of this century to 1.3% from 2011 to 2014 and near zero growth rates during the last few years. The carbon emission curve is bending, but we have a long way to go and very little time for achieving carbon neutrality**. We need institutions and enterprises that can accelerate this bending by scaling-up the solutions that are being proven in the living laboratories. We have less than a decade to put these solutions in place around the world to preserve nature and our quality of life for generations to come. The time is now.

The Paris Agreement is an historic achievement. For the first time, effectively all nations have committed to limiting their greenhouse gas emissions and taking other actions to limit global temperature change. Specifically, 197 nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” and achieve carbon neutrality in the second half of this century.

**The climate has already warmed by 1°C. The problem is running ahead of us, and under current trends we will likely reach 1.5°C in the next fifteen years and surpass the 2°C guardrail by mid-century with a 50% probability of reaching 4°C by end of century**. Warming in excess of 3°C is likely to be a global catastrophe for three major reasons:

• **Warming in the range of 3°C to 5°C is suggested as the threshold for several tipping points in the physical and geochemical systems; a warming of about 3°C has a probability of over 40% to cross over multiple tipping points, while a warming close to 5°C increases it to nearly 90%, compared with a baseline warming of less than 1.5°C, which has only just over a 10% probability of exceeding any tipping point.**

**• Health effects of such warming are emerging as a major if not dominant source of concern. Warming of 4°C or more will expose more than 70% of the population, i.e. about 7 billion by the end of the century, to deadly heat stress and expose about 2.4 billion to vector borne diseases such as Dengue, Chikengunya, and Zika virus among others**. Ecologists and paleontologists have proposed that warming in excess of 3°C, accompanied by increased acidity of the oceans by the buildup of CO2 , can become a major causal factor for exposing more than 50% of all species to extinction. 20% of species are in danger of extinction now due to population, habitat destruction, and climate change.

The good news is that **there may still be time to avert such catastrophic changes**. The Paris Agreement and **supporting climate policies must be strengthened substantially within the next five years to bend the emissions curve down faster, stabilize climate, and prevent catastrophic warming**. To the extent those efforts fall short, societies and **ecosystems will be forced to contend with substantial needs for adaptation—a burden that will fall disproportionately on the poorest three billion who are least responsible for causing the climate change problem.**

Here we propose a policy roadmap with a realistic and reasonable chance of limiting global temperature to safe levels and preventing unmanageable climate change—an outline of specific science-based policy pathways that serve as the building blocks for a three-lever strategy that could limit warming to well under 2°C. The projections and the emission pathways proposed in this summary are based on a combination of published recommendations and new model simulations conducted by the authors of this study (see Figure 2). We have framed the plan in terms of four building blocks and three levers, which are implemented through 10 solutions. The first building block would be fully implementing the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC). In addition, several sister agreements that provide targeted and efficient mitigation must be strengthened. Sister agreements include the Kigali Amendment to the Montreal Protocol to phase down HFCs, efforts to address aviation emissions through the International Civil Aviation Organization (ICAO), maritime black carbon emissions through the International Maritime Organization (IMO), and the commitment by the eight countries of the Arctic Council to reduce black carbon emissions by up to 33%. There are many other complementary processes that have drawn attention to specific actions on climate change, such as the Group of 20 (G20), which has emphasized reform of fossil fuel subsidies, and the Climate and Clean Air Coalition (CCAC). HFC measures, for example, can avoid as much as 0.5°C of warming by 2100 through the mandatory global phasedown of HFC refrigerants within the next few decades, and substantially more through parallel efforts to improve energy efficiency of air conditioners and other cooling equipment potentially doubling this climate benefit.

For the second building block, numerous subnational and city scale climate action plans have to be scaled up. One prominent example is California’s Under 2 Coalition signed by over 177 jurisdictions from 37 countries in six continents covering a third of world economy. The goal of this Memorandum of Understanding is to catalyze efforts in many jurisdictions that are comparable with California’s target of 40% reductions in CO2 emissions by 2030 and 80% reductions by 2050—emission cuts that, if achieved globally, would be consistent with stopping warming at about 2°C above pre-industrial levels. Another prominent example is the climate action plans by over 52 cities and 65 businesses around the world aiming to cut emissions by 30% by 2030 and 80% to 100% by 2050. There are concerns that the carbon neutral goal will hinder economic progress; however, real world examples from California and Sweden since 2005 offer evidence that economic growth can be decoupled from carbon emissions and the data for CO2 emissions and GDP reveal that growth in fact prospers with a green economy.

The third building block consists of two levers that we need to pull as hard as we can: one for drastically reducing emissions of short-lived climate pollutants (SLCPs) beginning now and completing by 2030, and the other for decarbonizing the global energy system by 2050 through efficiency and renewables. Pulling both levers simultaneously can keep global temperature rise below 2°C through the end of the century. If we bend the CO2 emissions curve through decarbonization of the energy system such that global emissions peak in 2020 and decrease steadily thereafter until reaching zero in 2050, there is less than a 20% probability of exceeding 2°C. This call for bending the CO2 curve by 2020 is one key way in which this report’s proposal differs from the Paris Agreement and it is perhaps the most difficult task of all those envisioned here. Many cities and jurisdictions are already on this pathway, thus demonstrating its scalability. Achieving carbon neutrality and reducing emissions of SLCPs would also drastically reduce air pollution globally, including all major cities, thus saving millions of lives and over 100 million tons of crops lost to air pollution each year. In addition, these steps would provide clean energy access to the world’s poorest three billion who are still forced to resort to 18th century technologies to meet basic needs such as cooking. For the fourth and the final building block, we are adding a third lever, ACE (Atmospheric Carbon Extraction, also known as Carbon Dioxide Removal, or “CDR”). This lever is added as an insurance against surprises (due to policy lapses, mitigation delays, or non-linear climate changes) and would require development of scalable measures for removing the CO2 already in the atmosphere. The amount of CO2 that must be removed will range from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons, if CO2 emissions continue to increase until 2030, and the carbon lever is not pulled until after 2030. This issue is raised because the NDCs (Nationally Determined Contributions) accompanying the Paris Agreement would allow CO2 emissions to increase until 2030. We call on economists and experts in political and administrative systems to assess the feasibility and cost-effectiveness of reducing carbon and SLCPs emissions beginning in 2020 compared with delaying it by ten years and then being forced to pull the third lever to extract one trillion tons of CO2

The fast mitigation plan of requiring emissions reductions to begin by 2020, which means that many countries need to cut now, is urgently needed to limit the warming to well under 2°C. Climate change is not a linear problem. Instead, we are facing non-linear climate tipping points that can lead to self-reinforcing and cascading climate change impacts. Tipping points and selfreinforcing feedbacks are wild cards that are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C in 15 years to 2°C by 2050, with the potential to push us well beyond the Paris Agreement goals.

Where Do We Go from Here?

**A massive effort will be needed to stop warming at 2°C, and time is of the essence. With unchecked business-as-usual emissions, global warming has a 50% likelihood of exceeding 4ºC and a 5% probability of exceeding 6ºC in this century, raising existential questions for most, but especially the poorest three billion people. A 4ºC warming is likely to expose as many as 75% of the global population to deadly heat.** Dangerous to catastrophic impacts on the health of people including generations yet to be born, on the health of ecosystems, and on species extinction have emerged as major justifications for mitigating climate change well below 2ºC, although we must recognize that the uncertainties intrinsic in climate and social systems make it hard to pin down exactly the level of warming that will trigger possibly catastrophic impacts. To avoid these consequences, we must act now, and we must act fast and effectively. This report sets out a specific plan for reducing climate change in both the near- and long-term. With aggressive urgent actions, we can protect ourselves. Acting quickly to prevent catastrophic climate change by decarbonization will save millions of lives, trillions of dollars in economic costs, and massive suffering and dislocation to people around the world. This is a global security imperative, as it can avoid the migration and destabilization of entire societies and countries and reduce the likelihood of environmentally driven civil wars and other conflicts.

Staying well under 2°C will require a concerted global effort. We must address everything from our energy systems to our personal choices to reduce emissions to the greatest extent possible. We must redouble our efforts to invent, test, and perfect systems of governance so that the large measure of international cooperation needed to achieve these goals can be realized in practice. The health of people for generations to come and the health of ecosystems crucially depend on an energy revolution beginning now that will take us away from fossil fuels and toward the clean renewable energy sources of the future. It will be nearly impossible to obtain other critical social goals, including for example the UN agenda 2030 with the Sustainable Development Goals, if we do not make immediate and profound progress stabilizing climate, as we are outlining here.

1. The Building Blocks Approach The 2015 Paris Agreement, which went into effect November 2016, is a remarkable, historic achievement. For the frst time, essentially all nations have committed to limit their greenhouse gas emissions and take other actions to limit global temperature and adapt to unavoidable climate change. Nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” and “achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century” (UNFCCC, 2015). Nevertheless, the initial Paris Agreement has to be strengthened substantially within fve years if we are to prevent catastrophic warming; **current pledges place the world on track for up to 3.4°C by 2100 (UNEP, 2016b). Until now, no specifc policy roadmap exists that provides a realistic and reasonable chance of limiting global temperatures to safe levels and preventing unmanageable climate change**. This report is our attempt to provide such a plan— an outline of specifc solutions that serve as the building blocks for a comprehensive strategy for limiting the warming to well under 2°C and avoiding dangerous climate change (Figure 1). The frst building block is the full implementation of the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC) and strengthening global sister agreements, such as the Kigali Amendment to the Montreal Protocol to phase down HFCs, which can provide additional targeted, fast action mitigation at scale. For the second building block, numerous sub-national and city scale climate action plans have to be scaled up such as California’s Under 2 Coalition signed by 177 jurisdictions from 37 countries on six continents. The third building block is targeted measures to reduce emissions of shortlived climate pollutants (SLCPs), beginning now and fully implemented by 2030, along with major measures to fully decarbonize the global economy, causing the overall emissions growth rate to stop in 2020-2030 and reach carbon neutrality by 2050. Such a deep decarbonization would require an energy revolution similar to the Industrial Revolution that was based on fossil fuels. The fnal building block includes scalable and reversible carbon dioxide (CO2 ) removal measures, which can begin removing CO2 already emitted into the atmosphere. Such a plan is urgently needed. Climate change is not a linear problem. Instead, climate tipping points can lead to self-reinforcing, cascading climate change impacts (Lenton et al., 2008). Tipping points are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C to 2°C, with the potential to push us well beyond the Paris Agreement goals (Drijfhout et al., 2015). In order to avoid dangerous climate change, we must address these concerns. **We must act now, and we must act fast. Reduction of SLCPs will result in fast, near-term reductions in warming, while present-day reductions of CO2 will result in long-term climate benefts**. This two-lever approach—aggressively cutting both SLCPs and CO2 –-will slow warming in the coming decades when it is most crucial to avoid impacts from climate change as well as maintain a safe climate many decades from now. To achieve the nearterm goals, we have outlined solutions to be implemented immediately. These solutions to bend down the rising emissions curve and thus bend the warming trajectory curve follow a 2015 assessment by the University of California under its Carbon Neutrality Initiative (Ramanathan et al., 2016). The solutions are clustered into categories of social transformation, governance improvement, market- and regulation-based solutions, technological innovation and transformation, and natural and ecosystem management. Additionally, we need to intensely investigate and pursue a third lever—ACE (Atmospheric Carbon Extraction). While many potential technologies exist, we do not know the extent to which they could be scaled up to remove the requisite amount of carbon from the atmosphere in order to achieve the Paris Agreement goals, and any delay in mitigation will demand increasing reliance on these technologies. Yet, there is still hope. Humanity can come together, as we have done in the past, to collaborate towards a common goal. We have no choice but to tackle the challenge of climate change. We only have the choice of when and how: **either now, through the ambitious plan outlined here, or later, through radical adaptation and societal transformations in response to an ever-deteriorating climate system that will unleash devastating impacts—some of which may be beyond our capacity to fully adapt to or reverse for thousands of years**.

2. Major Climate Disruptions: How Soon and How Fast? “Without adequate mitigation and adaptation, climate change poses unacceptable risks to global public health.” (WHO, 2016)

The planet has already witnessed nearly 1°C of warming, and another 0.6°C of additional warming is currently stored in the ocean to be released over the next two to four decades, if climate warming emissions are not radically reduced during that time (IPCC, 2013). The impacts of this warming on extreme weather, droughts, and foods are being felt by society worldwide to the extent that many think of this no longer as climate change but as climate disruption. Consider the business as usual scenario:

15 years from now: In 15 years, planetary warming will reach 1.5°C above pre-industrial global mean temperature (Ramanathan and Xu, 2010; Shindell et al., 2012). This exceeds the 0.5°C to 1°C of warming during the Eemian period, 115,000– 130,000 years ago, when sea-levels reached 6-9 meters (20-30 feet) higher than today (Hansen et al., 2016b). The impacts of this warming will affect us all yet will disproportionately affect the Earth’s poorest three billion people, who are primarily subsistence farmers that still rely on 18th century technologies and have the least capacity to adapt (IPCC, 2014a; Dasgupta et al., 2015). They thus may be forced to resort to mass migration into city slums and push across international borders (U.S. DOD, 2015). The existential fate of lowlying small islands and coastal communities will also need to be addressed, as they are primarily vulnerable to sea-level rise, diminishing freshwater resources, and more intense storms. In addition, many depend on fsheries for protein, and these are likely to be affected by ocean acidifcation and climate change. Climate injustice could start causing visible regional and international conficts. All of this will be exacerbated as the risk of passing tipping points increases (Lenton et al., 2008).

30 years from now: By mid-century, warming is expected to exceed 2°C, which would be unprecedented with respect to historical records of at least the last one million years (IPCC, 2014c). Such a warming through this century could result in sea-level rise of as much as 2 meters by 2100, with greater sea-level rise to follow. A group of tipping points are clustered between 1.5°C and 2°C (Figure 2) (Drijfhout et al., 2015). The melting of most mountain glaciers, including those in the Tibetan-Himalayas, combined with mega-droughts, heat waves, storms, and foods, would adversely affect nearly everyone on the planet.

80 years from now: In 80 years, warming is expected to exceed 4°C, increasing the likelihood of irreversible and catastrophic change (World Bank, 2013b). 4ºC warming is likely to expose as much as 75% of the global population to deadly heat (Mora et al., 2017). The 2°C and 4°C values quoted above and in other reports, however, are merely the central values with a 50% probability of occurrence (Ramanathan and Feng, 2008). There is a 5% probability the warming could be as high as 6°C due to uncertainties in the magnitude of amplifying feedbacks (see Section 4). This in turn could lead to major disruptions to natural and social systems, threatening food security, water security, and national security and fundamentally affecting the great majority of the projected 11.2 billion inhabitants of the planet in 2100 (UN DESA, 2015).

3. What Are the Wild Cards for Climate Disruption? Increasing the concentrations of greenhouse gases in the atmosphere increases radiative forcing (the difference between the amount of energy entering the atmosphere and leaving) and thus increases the global temperature (IPCC, 2013). However, climate wild cards exist that can alter the linear connection with warming and anthropogenic emissions by triggering abrupt changes in the climate (Lenton et al., 2008). Some of these wild cards have not been thoroughly captured by the models that policymakers rely on the most. These abrupt shifts are irreversible on a human time scale (<100 years) and will create a notable disruption to the climate system, condemning the world to warming beyond that which we have previously projected. These climate disruptions would divert resources from needed mitigation and upset mitigation strategies that we have already put in place.

1. Unmasking Aerosol Cooling: The frst such wild card is the unmasking of an estimated 0.7°C (with an uncertainty range of 0.3°C to 1.2°C) of the warming in addition to mitigating other aerosol effects such as disrupting rainfall patterns, by reducing emissions of aerosols such as sulfates and nitrates as part of air pollution regulations (Wigley, 1991; Ramanathan and Feng, 2008). Aerosol air pollution is a major health hazard with massive costs to public health and society, including contributing to about 7 million deaths (from household and ambient exposure) each year (WHO, 2014). While some aerosols, such as black carbon and brown carbon, strongly absorb sunlight and warm the climate, others refect sunlight back into space, which cools the climate (Ramanathan and Carmichael, 2008). The net impact of all manmade aerosols is negative, meaning that about 30% of the warming from greenhouse gases is being masked by co-emitted air pollution particles (Ramanathan and Carmichael, 2008). As we reduce greenhouse gas emissions and implement policies to eliminate air pollution, we are also reducing the concentration of aerosols in the air. Aerosols last in the atmosphere for about a week, so if we eliminate air pollution without reducing emissions of the greenhouse gases, the unmasking alone would lead to an estimated 0.7°C of warming within a matter of decades (Ramanathan and Feng, 2008). We must eliminate all aerosol emissions due to their health effects, but we must simultaneously mitigate emissions of CO2 , other greenhouse gases, and black carbon and co-pollutants to avoid an abrupt and very large jump in the near-term warming beyond 2°C (Brasseur and Roeckner, 2005).

2. Tipping Points**: It is likely that as we cross the 1.5°C to 2°C thresholds we will trigger so called “tipping points” for abrupt and nonlinear changes in the climate system with catastrophic consequences** for humanity and the environment (Lenton, 2008; Drijfhout et al., 2015). Once the tipping points are passed, the resulting impacts will range in timescales from: disruption of monsoon systems (transition in a year), loss of sea ice (approximately a decade for transition), dieback of major forests (nearly half a century for transition), reorganization of ocean circulation (approximately a century for transition), to loss of ice sheets and subsequent sea-level rise (transition over hundreds of years) (Lenton et al., 2008). Regardless of timescale, once underway many of these changes would be irreversible (Lontzek et al., 2015). There is also a likelihood of crossing over multiple tipping points simultaneously. Warming of close to 3°C would subject the system to a 46% probability of crossing multiple tipping points, while warming of close to 5°C would increase the risk to 87% (Cai et al., 2016). Recent modeling work shows a “cluster” of these tipping points could be triggered between 1.5°C and 2°C warming (Figure 2), including melting of land and sea ice and changes in highlatitude ocean circulation (deep convection) (Drijfhout et al., 2015). This is consistent with existing observations and understanding that the polar regions are particularly sensitive to global warming and have several potentially imminent tipping points. The Arctic is warming nearly twice as quickly as the global average, which makes the abrupt changes in the Arctic more likely at a lower level of global warming (IPCC, 2013). Similarly, the Himalayas are warming at roughly the same rate as the Arctic and are thus also more susceptible to incremental changes in temperature (UNEP-WMO, 2011). This gives further justifcation for limiting warming to no more than 1.5°C.

While all climate tipping points have the potential to rapidly destabilize climate, social, and economic systems, some are also **self-amplifying feedbacks that once set in motion increase warming in such a way that they perpetuate yet even more warming. Declining Arctic sea ice, thawing permafrost, and the poleward migration of cloud systems are all examples of self-amplifying feedback mechanisms, where initial warming feeds upon itself to cause still more warming acting as a force multiplier (Schuur et al., 2015).**

#### The US – Indian alliance changed posturing in the Indo-Pacific

Tellis 18 [(Ashley J, the Tata Chair for Strategic Affairs and is a senior fellow at the Carnegie Endowment for International Peace, specializing in international security and U.S. foreign and defense policy with a special focus on Asia and the Indian subcontinent.) “Narendra Modi and U.S.–India Relations” Carnegie Endowment for International Peace, 11/1/2018] BC

The second example of remarkable success has been India’s cooperation with the US in shaping the security environment in the Indo-Pacific. While this term has taken on new life under President Trump, the defining agreement between the US and India occurred under President Obama. Prime Minister Modi’s active involvement in shaping the ‘US–India Joint Strategic Vision for the Asia-Pacific and the Indian Ocean Region’ was couched in innocuous language, but its import was momentous.18 India did not simply reaffirm its commitment to the freedom of navigation and overflight—especially in the South China Sea where the threats from China are particularly acute—but it declared its willingness to contribute towards larger diplomatic and regional integration in order to ‘bolster long-term peace and prosperity for all’.

#### US- India alliance is key to prevent Chinese regional hegemony

Riback 20 [(Emerson, a Fellow at Robson Program for Business, Public Policy & Government at Emory) “The Real Game of Thrones: How the U.S. Can Retain Primacy Over China in New Era of Great Power Competition” Emory Goizueta Business School, 3/2020] BC

In a “Pillars of Survival” world, an economic approach is only half the battle. Creating security arrangements provides the other half. After all, particularly for small but strategic players within the Indo-Pacific region, economic connection with the United States will be beneficial only to the extent these countries don’t suffer from China’s military might. The boxer Mike Tyson, of course, summarized this reality: "Everybody has a plan until they get punched in the mouth."47

To prevent China from establishing hegemony in East Asia, the United States must maintain a robust military presence in the region. This means the United States will need to form a coalition of willing nations to assist in balancing China’s growing military heft. Such a policy would recognize the implausibility of establishing military dominance within the region – a reality the United States has not faced since the end of the Cold War – and instead would focus on deterring Chinese misbehavior and ensuring other significant interests remain intact, such as freedom of navigation

While China currently does not possess the capability to militarily dominate its neighbors, 48 it has shown a willingness to intimidate them and take unilateral action when it finds international law unsatisfactory. Most brazenly, China has sought to establish a large security buffer zone through its nine-dash line territorial claims in the Southeastern Pacific. China has gone so far as to create artificial islands in the Paracel and the Spratlys to enforce its claims – and then went further, militarizing the islands after Xi’s explicit 2015 pledge in the White House Rose Garden against militarization and following The Hague’s Tribunal Court’s 2016 ruling that declared China’s territorial claims on the islands illegitimate. Instead, China has doubled down and now considers these South China Sea islands as its sovereign territory. 49 If China’s nine-dash line claims are realized, neighboring nations will be excluded from accessing resources within their exclusive economic zones (EEZ), have their freedom of navigation threatened, and be increasingly vulnerable to Chinese coercion. In recent years, Chinese threats have turned to action: China has sought to enforce its territorial claims by using its Coast Guard to harass – and sometimes even ram – foreign vessels operating in the South China Sea. Additionally, China has issued threats to countries in the region, such as Vietnam, when these countries attempt to extract natural resources such as oil, gas, or fish. 50 Understanding the enormous regional power imbalance, China has strategically enforced its territorial claims in the South China Sea. Such behavior, while rational, blatantly disregards international laws and norms and demonstrates the need for a U.S. counterweight in the region.

#### US leadership in this decade solves global war and results in a peaceful end to Chinese revisionism **Erickson and Collins 10/21** [(Andrew, A professor of strategy in the U.S. Naval War College’s China Maritime Studies Institute)(Gabriel, Baker Botts fellow in energy and environmental regulatory affairs at Rice University’s Baker Institute for Public Policy) “A Dangerous Decade of Chinese Power Is Here,” Foreign Policy, 10/18/2021] **U.S. and allied policymakers are facing the most important foreign-policy challenge of the 21st century. China’s power is peaking; so is the political position of Chinese President Xi Jinping and the Chinese Communist Party’s (CCP) domestic strength. In the long term, China’s likely decline after this peak is a good thing. But right now, it creates a decade of danger from a system that increasingly realizes it only has a short time to fulfill some of its most critical, long-held goals.**

Within the next five years, China’s leaders are likely to conclude that its deteriorating demographic profile, structural economic problems, and technological estrangement from global innovation centers are eroding its leverage to annex Taiwan and achieve other major strategic objectives. As Xi internalizes these challenges, his foreign policy is likely to become even more accepting of risk, feeding on his nearly decadelong track record of successful revisionist action against the rules-based order. Notable examples include China occupying and militarizing sub-tidal features in the South China Sea, ramping up air and maritime incursions against Japan and Taiwan, pushing border challenges against India, occupying Bhutanese and Tibetan lands, perpetrating crimes against humanity in [Xinjiang](https://www.nytimes.com/interactive/2019/11/16/world/asia/china-xinjiang-documents.html), and coercively enveloping Hong Kong.

The relatively low-hanging fruit is plucked, but Beijing is emboldened to grasp the biggest single revisionist prize: Taiwan.

Beijing’s actions over the last decade have triggered backlash, such as with the so-called AUKUS deal, but concrete constraints on China’s strategic freedom of action may not fully manifest until after 2030. It’s remarkable and dangerous that China has paid few costs for its actions over the last 10 years, even as its military capacities have rapidly grown.

Beijing will likely conclude that under current diplomatic, economic, and force postures for both “gray zone” and high-end scenarios, the 2021 to late 2020s timeframe still favors China—and is attractive for its 68-year-old leader, who seeks a historical achievement at the zenith of his career.

U.S. planners must mobilize resources, effort, and risk acceptance to maximize power and thereby deter Chinese aggression in the coming decade—literally starting now—and innovatively employ assets that currently exist or can be operationally assembled and scaled within the next several years. That will be the first step to pushing back against China during the 2020s—a decade of danger—before what will likely be a waning of Chinese power.

As Beijing aggressively seeks to undermine the international order and promotes a narrative of inevitable Chinese strategic domination in Asia and beyond, it creates a dangerous contradiction between its goals and its medium-term capacity to achieve them. China is, in fact, likely nearing the apogee of its relative power; and by 2030 to 2035, it will cross a tipping point from which it may never recover strategically. Growing headwinds constraining Chinese growth, while not publicly acknowledged by Beijing, help explain Xi’s high and apparently increasing risk tolerance. Beijing’s window of strategic opportunity is sliding shut.

China’s skyrocketing household debt levels exemplify structural economic constraints that are emerging much earlier than they did for the United States when it had similar per capita GDP and income levels. Debt is often a wet blanket on consumption growth. A 2017 analysis published by the Bank for International Settlements found that once the household debt-to-GDP ratio in a sample of 54 countries exceeded 60 percent, “the negative long-run effects on consumption tend to intensify.” China’s household debt-to-GDP ratio surpassed that empirical danger threshold in late 2020. Rising debt service burdens thus threaten Chinese consumers’ capacity to sustain the domestic consumption-focused “dual circulation” economic model that Xi and his advisors seek to build. China’s growth record during the past 30 years has been remarkable, but past exceptionalism does not confer future immunity from fundamental demographic and economic headwinds.

As debt levels continue to rise at an absolute level that has accelerated almost continuously for the past decade, China also faces a hollowing out of its working-age population. This critical segment peaked in 2010 and has since declined, with the rate from 2015 to 2020 nearing 0.6 percent annually—nearly twice the respective pace in the United States. While the United States faces demographic challenges of its own, the disparity between the respective paces of decline highlights its relative advantage compared to its chief geopolitical competitor. Moreover, the United States can choose to access a global demographic and talent dividend via immigration in a way China simply will not be able to do.

Atop surging debt and worsening demographics, China also faces resource insecurity. China’s dependence on imported food and energy has grown steadily over the past two decades. Projections from Tsinghua University make a compelling case that China’s oil and gas imports will peak between 2030 and 2035. As China grapples with power shortages, Beijing has been reminded that supply shortfalls equal to even a few percentage points of total demand can have outsized negative impacts.

Domestic resource insufficiency by itself does not hinder economic growth—as the Four Asian Tigers’ multi-decade boom attests. But China is in a different position. Japan and South Korea never had to worry about the U.S. Navy interdicting inbound tankers or grain ships. In fact, the United States was avowedly willing to use military force to protect energy flows from the Persian Gulf region to its allies. Now, as an increasingly energy-secure United States pivots away from the Middle East toward the Indo-Pacific, there is a substantial probability that energy shipping route protection could be viewed in much more differentiated terms—with oil and liquefied natural gas cargoes sailing under the Chinese flag viewed very differently than cargoes headed to buyers in other regional countries.

Each of these dynamics—demographic downshifts, rising debts, resource supply insecurity—either imminently threatens or is already actively interfering with the CCP’s long-cherished goal of achieving a “moderately prosperous society.” Electricity blackouts, real estate sector travails (like those of Evergrande) that show just how many Chinese investors’ financial eggs now sit in an unstable $52 trillion basket, and a solidifying alignment of countries abroad concerned by aggressive Chinese behavior all raise questions about Xi’s ability to deliver. With this confluence of adverse events only a year before the next party congress, where personal ambition and survival imperatives will almost drive him to seek anointment as the only Chinese “leader for life” aside from former leader Mao Zedong, the timing only fuels his sense of insecurity. Xi’s anti-corruption campaigns and ruthless removal of potential rivals and their supporters solidified his power but likely also created a quiet corps of opponents who may prove willing to move against him if events create the perception he’s lost the “mandate of heaven.” Accordingly, the baseline assumption should be that Xi’s crown sits heavy and the insecurity induced is thereby intense enough to drive high-stake, high-consequence posturing and action.

While Xi is under pressure to act, the external risks are magnified because so far, he has suffered few consequences from taking actions on issues his predecessors would likely never have gambled on. Reactions to party predations in Xinjiang and [Hong Kong](https://home.treasury.gov/policy-issues/financial-sanctions/recent-actions/20210716_33) have been restricted to diplomatic-signaling pinpricks, such as sanctioning responsible Chinese officials and entities, most of whom lack substantial economic ties to the United States. Whether U.S. restraint results from a fear of losing market access or a belief that China’s goals are ultimately limited is not clear at this time.

While the CCP issues retaliatory sanctions against U.S. officials and proclaims a triumphant outcome to its hostage diplomacy, these tactical public actions mask a growing private awareness that China’s latitude for irredentist action is poised to shrink. Not knowing exactly when domestic and external constraints will come to bite—but knowing that when Beijing sees the tipping point in its rearview mirror, major rivals will recognize it too—amplifies Xi and the party’s anxiety to act on a shorter timeline. Hence the dramatic acceleration of the last few years.

Just as China is mustering its own strategic actions, so the United States must also intensify its focus and deployment of resources. The United States has taken too long to warm up and confront the central challenge, but it retains formidable advantages, agility, and the ability to prevail—provided it goes all-in now. Conversely, if Washington fails to marshal its forces promptly, its achievements after 2030 or 2035 will matter little. Seizing the 2020s would enable Beijing to ~~cripple~~ [destroy] the free and open rules-based order and entrench its position by economically subjugating regional neighbors (including key U.S. treaty allies) to a degree that could offset the strategic headwinds China now increasingly grapples with.

Deterrence is never certain. But it offers the highest probability of avoiding the certainty that an Indo-Pacific region dominated by a CCP-led China would doom treaty allies, threaten the U.S. homeland, and likely set the stage for worse to come. Accordingly, U.S. planners should immediately mobilize resources and effort as well as accept greater risks to deter Chinese action over the critical next decade.

The greatest threat is armed conflict over Taiwan, where U.S. and allied success or failure will be fundamental and reverberate for the remainder of the century. There is a high chance of a major move against Taiwan by the late 2020s—following an extraordinary ramp-up in People’s Liberation Army capabilities and before Xi or the party state’s power grasp has ebbed or Washington and its allies have fully regrouped and rallied to the challenge.

So how should policymakers assess the potential risk of Chinese action against Taiwan reaching dangerous levels by 2027 or possibly even earlier—as emphasized in the testimonies of Adms. Philip Davidson and John Aquilino? In June, Chairman of the Joint Chiefs Gen. Mark Milley testified to the House of Representatives that Xi had “challenged the People’s Liberation Army to accelerate their modernization programs to develop capabilities to seize Taiwan and move it from 2035 to 2027,” although China does not currently have the capabilities or intentions to conduct an all-out invasion of mainland Taiwan.

U.S. military leaders’ assessments are informed by some of the world’s most extensive and sophisticated internal information. But what’s striking is open-source information available to everyone suggests similar things. Moving forward, a number of open-source indicators offer valuable “early warning lights” that can help policymakers more accurately calibrate both potential timetables and risk readings as the riskiest period of relations—from 2027 onward—approaches.

Semiconductors supply self-sufficiency. Taiwan is the “OPEC+” of semiconductors, accounting for approximately two-thirds of global chip foundry capacity. A kinetic crisis would almost certainly disrupt—and potentially even completely curtail—semiconductor supplies. China presently spends even more each year on semiconductor imports (around $380 billion) than it does on [oil](http://english.customs.gov.cn/Statics/0aba4bfd-f8ed-477c-9d16-dc3def897b7b.html), but much of the final products are destined for markets abroad. Taiwan is producing cutting-edge 5-nanometer and 7-nanometer chips, but China produces around 80 percent of the rest of the chips in the world. The closer China comes to being able to secure “good enough” chips for “inside China-only” needs, the less of a constraint this becomes.

Crude oil, grain, strategic metals stockpiles—the commercial community (Planet Labs, Ursa Space Systems, etc.) has developed substantial expertise in cost-effectively tracking inventory changes for key input commodities needed to prepare for war.

Electric vehicle fleet size—the amount of oil demand displaced by electric vehicles varies depending on miles driven, but the more of China’s car fleet that can be connected to the grid (and thus powered by blockade-resistant coal), the less political burden Beijing will face if it has to weather a maritime oil blockade imposed in response to actions it took against Taiwan or other major revisionist adventures. China’s passenger vehicle fleet, now approximately 225 million units strong, counts nearly 6.5 million electric vehicles among its ranks, the lion’s share of which are full-battery electrics. China’s State Council seeks to have 20 percent of new vehicles sold in China be electric vehicles by 2025. This target has already basically been achieved over the last few months, meaning at least 3.5 to 4 million (and eventually many more) new elective vehicles will enter China’s car fleet each year from now on.

Local concentration of maritime vessels—snap exercises with warships, circumnavigations, and midline tests with swarms of aircraft highlight the growing scale of China’s threat to [Taiwan](https://www.andrewerickson.com/2021/06/quick-look-cmsis-4-6-may-2021-conference-large-scale-amphibious-warfare-in-chinese-military-strategy-taiwan-strait-campaign-focus/). But these assets alone cannot invade the island. To capture and garrison, Beijing would need not only air, missile, naval, and special operations forces but also the ability to move lots of equipment and—at the very least—tens of thousands of personnel across the Taiwan Strait. As such, Beijing would have to amass maritime transport assets. And given the scale required, this would alter ship patterns elsewhere along China’s coast in ways detectable with artificial intelligence-facilitated imagery analysis from firms like Planet Labs (or national assets).

Only the most formidable, agile American and allied deterrence can kick the can down the road long enough for China’s slowdown to shut the window of vulnerability. Holding the line is likely to require frequent and sustained proactive enforcement actions to disincentivize full-frontal Chinese assaults on the rules-based order in the Indo-Pacific. Chinese probing behavior and provocations must be met with a range of symmetric and asymmetric responses that impose real costs, such as publishing assets owned by Chinese officials abroad, cyber interference with China’s technological social control apparatus, “hands on” U.S. Navy and Coast Guard enforcement measures against Maritime Militia-affiliated vessels in the South China Sea, intensified air and maritime surveillance of Chinese naval bases, and visas and resettlement options to Hong Kongers, Uyghurs, and other threatened Chinese citizens—including CCP officials (and their families) who seek to defect and/or leave China. U.S. policymakers must make crystal clear to their Chinese counterparts that the engagement-above-all policies that dominated much of the past 25 years are over and the risks and costs of ongoing—and future—adventurism will fall heaviest on China.

Bombastic Chinese reactions to emerging cohesive actions verify the approach’s effectiveness and potential for halting—and perhaps even reversing—the revisionist tide China has unleashed across the Asian region. Consider the recent nuclear submarine deal among Australia, the United States, and the United Kingdom. Beijing’s strong public reaction (including toleration of [nuclear threats](https://www.globaltimes.cn/page/202109/1234460.shtml) made by the state-affiliated *Global Times*) highlights the gap between its global information war touting China’s irresistible power and deeply insecure internal self-perception. Eight nuclear submarines will ultimately represent formidable military capacity, but for a bona fide superpower that believes in its own capabilities, they would not be a game-changer. Consider the U.S.-NATO reaction to the Soviet Union’s commissioning of eight Oscar I/II-class cruise missile subs during the late Cold War. These formidable boats each carried 24 SS-N-19 Granit missiles specifically designed to kill U.S. carrier battle groups, yet NATO never stooped to public threats.

With diplomatic proofs of concepts like the so-called AUKUS deal, the Quadrilateral Security Dialogue, and hard security actions like the Pacific Deterrence Initiative now falling into place, it is time to comprehensively peak the non-authoritarian world’s protective action to hold the line in the Indo-Pacific. During this decade, U.S. policymakers must understand that under Xi’s strongman rule, personal political survival will dictate Chinese behavior. Xi’s recreation of a “one-man” system is a one-way, high-leverage bet that decisions he drives will succeed.

If Xi miscalculates, a significant risk given his suppression of dissenting voices while China raises the stakes in its confrontation with the United States, the proverbial “leverage” that would have left him with outsized returns on a successful bet would instead amplify the downside, all of which he personally and exclusively signed for. Resulting tensions could very realistically undermine his status and authority, embolden internal challengers, and weaken the party. They could also foreseeably drive him to double down on mistakes, especially if those led to—or were made in the course of—a kinetic conflict. Personal survival measures could thus rapidly transmute into regional or even global threats.

If Xi triggered a “margin call” on his personal political account through a failed high-stakes gamble, it would likely be paid in blood. Washington must thus prepare the U.S. electorate and its institutional and physical infrastructure as well as that of allies and partners abroad for the likelihood that tensions will periodically ratchet up to uncomfortable levels—and that actual conflict is a concrete possibility. Si vis pacem, para bellum (“if you want peace, prepare for war”) must unfortunately serve as a central organizing principle for a variety of U.S. and allied decisions during the next decade with China.

Given these unforgiving dynamics and stakes, implications for U.S. planners are stark: Do whatever remains possible to “peak” for deterrent competition against China by the mid-to-late 2020s, and accept whatever trade-offs are available for doing so.

Nothing we might theoretically achieve in 2035 and beyond is worth pursuing at the expense of China-credible capabilities we can realistically achieve no later than the mid-to-late 2020s.

## Debris

#### You link to debris— the Gilliard 19 ev is about why debris causes the destruction of satellites.

#### Debris creates existential deterrence by raising the bar for conflict – international norms fail

Miller 7/31 [(Gregory, Chair of the Department of Space Power at the Air Command and Staff College, Ph.D. in Political Science from The Ohio State University) “Deterrence by Debris: The Downside to Cleaning up Space,” Space Policy, 7/31/2021] JL

The danger of kinetic strikes increasing orbital debris is a common theme in the literature, but the positive deterrent effects of some debris are often overlooked. The debris resulting from destroyed satellites, or other space objects, creates a deterrent effect on actors who might otherwise violate international norms and strike at objects in space, either to test their capabilities or as an act of hostilities. This is not deterrence in the traditional sense, of one actor publicly threatening punishment in response to another actor’s unwanted actions. It is not deterrence by denial since the attacker is not damaged and may even achieve its objective. Nor is it deterrence by punishment because the debris itself does not threaten to punish the attacker’s country. But debris can increase the future costs to the aggressor, even if their initial attack succeeds, and thus it has a similar restraining effect on certain behavior. Like the automated response of the U.S. tripwire in West Germany, the threat that debris can pose to state interests acts as a form of deterrence, at least to prevent some actors from taking certain types of actions. Removing the danger of debris will weaken that restraint and thus weaken deterrence, making ASAT tests and hostile actions in space more likely.

Several factors may deter a state from launching kinetic tests or striking against an adversary’s interests in space. For one thing, if a state’s adversary has similar capabilities to destroy objects in space, deterrence would be a function of not wanting to escalate tensions. Although international law only explicitly prohibits states from placing weapons of mass destruction in orbit, international space law, like the Outer Space Treaty [30], does provide a framework for addressing the activities of one state that lead to the damage of another state’s property. Likewise, there are international norms (informal but expected rules of behavior) against the weaponization of space. But these norms seem to be in decline [31], and such norms only deter a state from engaging in certain types of behavior if the state cares about following norms, if it cares about how states perceive its behavior, or if it believes other states are willing to enforce the norms. The beauty of debris as a deterrent is that it does not rely on the enforcement of norms or the credibility of states to succeed.

#### Space debris creates existential deterrence and a taboo

Bowen 18 [(Bleddyn, lecturer in International Relations at the University of Leicester) “The Art of Space Deterrence,” European Leadership Network, February 20, 2018, https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/] TDI

Fourth, the ubiquity of space infrastructure and the fragility of the space environment may create a degree of existential deterrence. As space is so useful to modern economies and military forces, a large-scale disruption of space infrastructure may be so intuitively escalatory to decision-makers that there may be a natural caution against a wholesale assault on a state’s entire space capabilities because the consequences of doing so approach the mentalities of total war, or nuclear responses if a society begins tearing itself apart because of the collapse of optimised energy grids and just-in-time supply chains. In addition, the problem of space debris and the political-legal hurdles to conducting debris clean-up operations mean that even a handful of explosive events in space can render a region of Earth orbit unusable for everyone. This could caution a country like China from excessive kinetic intercept missions because its own military and economy is increasingly reliant on outer space, but perhaps not a country like North Korea which does not rely on space. The usefulness, sensitivity, and fragility of space may have some existential deterrent effect. China’s catastrophic anti-satellite weapons test in 2007 is a valuable lesson for all on the potentially devastating effect of kinetic warfare in orbit.

### Indopak war

#### The PTI ev— this lists Kashmir as one of the alt causes to indo-pak war— if the aff can’t resolve Kashmir it can’t solve— which they cant that was cx.

PTI 12/24 [ The Press Trust of India Ltd., commonly known as PTI, is the largest news agency in India. It is headquartered in New Delhi and is a nonprofit cooperative among more than 500 Indian newspapers 12-24-2021 East Mojo “India-Pakistan ties: Too near yet far apart” https://www.eastmojo.com/national/2021/12/24/india-pakistan-ties-too-near-yet-far-apart/ ] //aaditg

Prime Minister Khan, while addressing a seminar on December 9 in Islamabad, said peace with India is not possible until the resolution of the Kashmir dispute. But he also added another hurdle

#### No Indo-Pak war – MAD checks, won’t be conventional, and India doesn’t have capability

Kugelman 16 [Michael Kugelman - senior program associate for South Asia at the Woodrow Wilson International Center for Scholars in Washington, D.C – “Could India and Pakistan Go to War? A shooting war is unlikely, but covert activities are a strong possibility.” September 24th, 2016, The Diplomat, <http://thediplomat.com/2016/09/could-india-and-pakistan-go-to-war/>] JLB

On the morning of September 18, four men identified by India as members of the Pakistani terror group Jaish-e-Mohammed (JeM) stormed an Indian Army base in the town of Uri in India-administered Kashmir and killed 18 troops. Just a few hours later, a video surfaced on social media that quickly went viral in India. In the video, an Indian soldier, standing in a bus and surrounded by other troops, energetically recites a violently anti-Pakistan poem. He warns that Pakistan will pay for its attempts to hurt India, and he identifies the names of Pakistani cities that could be destroyed. His fellow troops join him in belting out the poem’s main refrain: “Pakistan, hear this loud and clear: If … war breaks out you will be obliterated. Kashmir will exist but Pakistan won’t.” Many Indians were singing a similarly bellicose tune in the hours immediately following the Uri attack. Some members of India’s notoriously hawkish media corps openly called for war on Pakistan. A top television news anchor, Arnab Goswami, implored India to “cripple” Pakistan and “bring them down to their knees.” Prominent print journalist Minhaz Merchant declared, “Let guns now talk with Pakistan.” The Indian government got in on this jingoistic act as well. “For one tooth, the complete jaw. So-called days of strategic restraint are over,” a top official with the ruling BJP party, Ram Madhav, posted on Facebook. Pakistan, meanwhile, responded with its own flurry of angry rhetoric. In a corps commanders conference on September 19, Army Chief Raheel Sharif declared that his country was “fully prepared to respond to the entire spectrum of direct and indirect threats” from India. Pakistan, he vowed, “will thwart any sinister design against [the] integrity and sovereignty of the country.” He was even more direct on September 23, vowing that the Army will defend “each and every inch” of the country “no matter what the cost.” The Uri attack came at a time of deep crisis in India-Pakistan relations. India is still smarting from an earlier attack on a military base in India, in the town of Pathankot in Punjab state in January, which it also blamed on JeM—a group with close ties to Pakistani intelligence. In March, Pakistan claimed to have arrested an Indian spy in the insurgency-riven province of Balochistan. Meanwhile, India has responded to recent uprisings in Kashmir, a Muslim-majority Indian state claimed by Pakistan, with characteristically brutal shows of force that have contributed to nearly 90 deaths in the unrest, outraging Pakistanis. In the days leading up to the Uri assault, India and Pakistan were waging a nasty war of words, with Islamabad excoriating India for its abusive acts in Kashmir and accusing it of committing terrorism in Pakistan, and New Delhi lambasting Pakistan for its brutal tactics in Balochistan. On the very night before the Uri attack, Pakistani Defense Minister Khawaja Asif threatened in a television interview to use nuclear weapons against India if Pakistan’s “defense and survival” were endangered. All this saber-rattling prompts a troubling question: Could the two countries go to war? The good news is that the terrifying prospect of an India-Pakistan shooting war—two nuclear-armed nemeses locked in conflict—is highly unlikely. The bad news is that a more shadowy war, marked by covert activities, is quite possible, if not inevitable. The main deterrent to a hot war on the subcontinent is nuclear weapons. Pakistan refuses to adopt a no-first use policy, meaning that it could conceivably respond to India’s use of conventional military force with a nuclear strike. This means that for India, any substantive military action against Pakistan—and even modest uses of force such as targeted airstrikes—would be dangerously risky. To avoid crossing any nuclear red lines, Indian military actions would need to be very modest and targeted—thereby hampering efforts to degrade and destroy terrorist compounds, Pakistani military facilities, or whatever India’s desired target may be. And yet such actions could still prompt Pakistani responses—such as the sponsoring of terror attacks in India. The two countries have fought three major wars, but they all occurred before 1998, when both nations became declared nuclear weapons states. A fourth war occurred in 1999, but it was a limited conflict, with Pakistani soldiers infiltrating into Kashmir and fighting Indian troops for two months before withdrawing back across the border. According to Bruce Riedel, a former top U.S. official on South Asia, U.S. President Bill Clinton successfully pressured Pakistan to withdraw its troops—after the CIA concluded that Pakistan was preparing to deploy and possibly use nuclear weapons. Another reason a hot war is unlikely is that India has limited capabilities to wage one. Research by South Asia security analysts George Perkovich and Toby Dalton, drawing on interviews with Indian military officials, concludes that the “surface attraction” of limited airstrikes is “offset significantly, if not equally, by risks and inadequacies.” Additionally, it contends that “there is vast room for improvement” in intelligence collection capacities. It also asserts that India’s capabilities to stage joint air and land operations are wanting. “Even at the level of exercises,” Perkovich and Dalton write, “the Indian Army and Air Force have not inspired each other’s confidence in their capacity to conduct effective combined operations in realistic warfare conditions.” In effect, India’s military has more than sufficient numbers—only the militaries of the United States and China have more than its 1.3 million active personnel—but less than sufficient capacity. Not surprisingly, India has signaled its hesitation to retaliate militarily to the Uri attack. Indian military commanders have reportedly counseled the government against any “rash” use of force. Indian Law Minister Ravi Shankar Prasad declared that any Indian response “will be done with full diplomatic and strategic maturity.” That’s a far cry from the jaw-for-a-tooth rhetoric emanating from New Delhi immediately after the attack. One more reason India may hesitate to use military force in retaliation to Uri is that it lacks sufficient evidence to tie Pakistan to the attack. Indian journalist Shivam Vij recently pointed out that a widely believed and reported claim in India—that the Uri terrorists had Pakistani markings on their weapons—actually lacks conclusive proof and has not been confirmed by New Delhi. All this said, something has to give. India’s government campaigned on a pledge to take a tougher line against Pakistan. New Delhi’s anti-Pakistan rhetoric has grown increasingly shrill in recent weeks, and many Indians are unhappy that their government did not retaliate against Pakistan after the Pathankot attack. For India’s Hindu nationalist government, passivity in the face of Pakistani provocation is an increasingly precarious position—and could prove politically damaging. To this end, there’s good reason to believe India could in due course launch a campaign of covert operations in Pakistan—mainly in the form of lightning strikes across the border to take out Pakistani terrorists. Several Indian media accounts have suggested this war has already begun, with one report claiming Indian Special Forces crossed into Pakistan and killed 20 terrorists. The accuracy of the report, however, has been disputed, particularly given that Pakistan has said nothing about such a raid. For India, covert activities inside Pakistan would have numerous advantages. They would allow, in some cases, for plausible deniability. They would fall short of any nuclear red lines. They would require less capacity and coordination than large-scale military action. And they would be less risky overall. Additionally, New Delhi could receive indirect support from Washington. Deepening U.S.-India cooperation could provide opportunities for Washington to share more intelligence about the location and activities of Pakistani terrorists. Additionally, India is keen to secure drones from the United States. Such an acquisition would dramatically enhance its surveillance capacity, and, if the unmanned craft are armed, strengthen its ability to stage covert airstrikes as well. To be sure, covert operations, while not as dangerous as full-scale conflict, could nonetheless be highly destabilizing for the subcontinent. Pakistanis already accuse India of waging covert war in Pakistan, from colluding with the Pakistani Taliban to collaborating with Baloch separatists. A wave of attacks on Pakistani troops or an assassination campaign against terrorists—regardless of whether there is clear evidence of Indian complicity—could lead to Pakistan-sponsored terror attacks in India. Given that Pakistan’s conventional forces are vastly outnumbered by India’s, it depends on asymmetrical tactics—such as providing support to anti-India terror groups—along with its nuclear umbrella to keep India at bay. With India scaling up its security cooperation with Afghanistan and launching a new transport corridor project in Iran, it will be increasingly visible in the broader region and therefore more vulnerable to assaults on its nationals and interests many miles from home. The uptake? Even limited, covert uses of force are fraught with considerable risk.

#### Zero risk of India-Pakistan conflict---deterrence checks escalation

S. Paul Kapur & Sumit Ganguly 16, Professor in the Department of National Security Affairs at the U.S. Naval Postgraduate School, Affiliate at Stanford University’s Center for International Security and Cooperation, and a Visiting Fellow at the Observer Research Foundation in New Delhi AND Professor of Political Science at University of Indiana-Bloomington, “India, Pakistan and the Unlikely Dream of a Nuclear-Free South Asia,” Global Nuclear Disarmament: Strategic, Political, and Regional Perspectives, edited by Nik Hynek & Michal Smetana, pp. 273-274, Google Books

This minimalist approach is changing, however. Today, **India is increasing all aspects of its nuclear weapons capability**. For example, **India is expanding fissile material production**: India and Pakistan are the only countries in the world that are currently believed to be doing so (Crail 2011). **India** probably possesses enough weapons-grade plutonium to produce 100—130 nuclear warheads. It **is increasing its production capacity with projects such as an unsafeguarded fast breeder reactor** under construction near Kalpakkam (Kristensen and Norris 2012). The **Indians are** also **improving their weapons-delivery capabilities**. For example, **the Agni V intermediate range ballistic missile**, which the Indians recently tested, **will have a range of** approximately **5000 km**, enabling it to reach targets anywhere in China. The **BRAHMOS** cruise **missile**, jointly developed with Russia, **will be able to strike targets at ranges of 300**—**500km** with conventional or nuclear warheads at supersonic speeds (Rahyuhin 2012). The **Indians are also working to acquire sea-based launch capabilities**, in addilion to land- and air-based platforms, to ensure that they are able to field a full nuclear triad (Davenport 2012; Kristensen and Norris 2012: 96).

India is doing this mainly for security-related reasons — reasons largely unconnected with its oft-cited nemesis, Pakistan.