# 1AC vs Kags

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### 1AC – Advantage

#### The advantage is violent non-state actors:

#### Space terrorism is a legitimate threat with extensive historical precedent

Miller 19 [(Gregory, PhD, The Ohio State University, is an associate professor of Leadership Studies at the Air Command and Staff College at Maxwell AFB, Alabama.) “Space Pirates, Geosynchronous Guerrillas, and Nonterrestrial Terrorists” AIR & SPACE POWER JOURNAL, Fall 2019. https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-33\_Issue-3/F-Miller.pdf] BC

There are several other ways groups could target a state’s space assets. Once a group has the ability to put something in orbit, it could self-detonate and the debris field itself would threaten any assets in that orbit. Authorities are particularly concerned about nonstate actors being able to use our own technology against us. One fear is of satellite systems being used for microwave-like attacks. Another is the targeting of the atomic clocks on GPS satellites, which could effectively “warp time.”26 Given there are already private companies capable of launching objects into orbit, we should not assume these are simply theoretical scenarios.

Although it may seem unlikely terrorist groups would target space capabilities, it is not without historical precedent. As far back as 1972, groups were thinking about using attacks against space assets to enhance their cause or gain more publicity. The Black September Palestinian group threatened an attack against the Apollo 17 mission, specifically to murder or kidnap the crew or their families. That same group killed Israeli athletes at the Munich Olympic Games earlier that year, so NASA took the threats seriously.27 Joshua Gelernter claims the attacks were thwarted, while Eugene Cernan’s autobiography suggests security patrols were added to the families’ homes and schools, but no attack took place.28 More recently, in 2003, NASA increased security for the Columbia shuttle launch, out of concern that al-Qaeda would attack the launch pad because of the Israeli astronaut on the flight.29 In 2013, a letter threatening terror attacks was found at an Indian Space Research Organization (ISRO) facility in Bangalore, India.30

It is one thing to threaten an attack, or for an agency to be concerned about attacks, but there have been real attacks against ground installations and satellites. On 3 August 1984, just two days before the launch of an Ariane satellite, the French left-wing group Action Directe bombed the European Space Agency’s (ESA) Paris headquarters, injuring six people.31 The ESA was also hacked in 2015 by the group Anonymous, resulting in the leak of thousands of credentials.32 Also, an ISRO computer was infected with malware, which could have given hackers control of rocket launches and satellite separation.33 While violent extremist organizations are not responsible for these last two attacks against ESA and ISRO, the incidents illustrate the existing capabilities of nonstate actors.

Also, if states continue to use their space capabilities to target nonstate actors, then we should expect space assets to become a bigger target for these groups. As an example, the Indian government used its satellites to help strike terrorist camps in Kashmir.34 Such uses of technology are valuable but also invite retaliation against the technology itself, or its operators.

#### Outer space is terrorists’ most likely target – symbolism, investment, and media coverage

Mehmood and Ahmed 21 [(Ashna Mehmood is a student of International Relations at National Defence University, Islamabad) (Shiza Ahmed is a student of International Relations at National Defence University, Islamabad.) “Terrorism in Space: A Possibility” A Journal of Strategic Studies, Summer 2021. http://journal.ciss.org.pk/index.php/ciss-insight/article/view/204] BC

To understand why terrorists may engage in terrorist activities we also need to understand the unique and special character of space such as its symbolic importance, money invested, and the worldwide media coverage associated with it. Thus, the act of space terrorism is more suited to achieving the aims of the terrorist groups. These groups might target advanced states such as the USA, Russia, or China with devastating effect. The reason being that these states are becoming more dependent on space technology with each passing day and a successful attack will result in large scale destruction to the infrastructure and human lives.

Counter-terrorism experts argue that even though suicide is often considered the primary weapon of the terrorists, it is never their first choice but used when other options have failed. This option is a means of achieving the desired result and is not a requirement of the catastrophic act. Therefore, the terrorists will opt for any method as long as it is available and help achieve mass casualties or a long-lasting psychological effect.

Terrorist groups select a target, which usually has a symbolic meaning or purpose. That means that there is an unlimited category of targets available to them to choose from. Even though counter-terrorism experts claim that terrorist operations rarely show innovation in their tactical operations. The world is rapidly progressing and the availability of new materials and learning of new skills is becoming easier. Terrorists are therefore more likely to expand choice of their targets.

Hence the policymakers need to foresee new possible threats that might emerge with the change in time and put themselves in the shoes of the terrorist to predict new methods they may use in future. As the world is advancing with its defense plans, the terrorists will most likely search for new ways to inflict damage. A terrorist-launched cruise missile attack would be an attractive option for terrorists against the US, as it has significant dependency on satellites and space based assets.

#### All primary space powers are targets – US, China, Russia, Japan, and Europe

Mehmood and Ahmed 21 [(Ashna Mehmood is a student of International Relations at National Defence University, Islamabad) (Shiza Ahmed is a student of International Relations at National Defence University, Islamabad.) “Terrorism in Space: A Possibility” A Journal of Strategic Studies, Summer 2021. http://journal.ciss.org.pk/index.php/ciss-insight/article/view/204] BC

While working on devising solutions to the possible threat of such activities, one must first single out the potential targets. Innovation in space technology is developing at a fast rate in the last few years. What started as space exploration has now become a $420 billion industry.13 Moreover, who are the key players in this industry? The developed states like the US, China, Russia and Japan are the major developers of space programs. While one cannot neglect the fact that most states are beneficiaries of these programs, the potential targets of space terrorism are the key players. There are two reasons associated with this inference: symbolism and a space dependency link.

The 9/11 attack on the world trade center and pentagon demonstrated the significance of symbolism in terrorism. The aim was not only to target the twin towers but also to destroy what was considered a landmark of western civilization. The same stands true for the space tech. The remarkable accomplishments of space missions carry a high degree of symbolic significance. They signify a state’s technological advancement. Hence, the targets of space terrorism would not be those who are the beneficiaries but those who are the primary stakeholders in space programs. States such as the US, Russia, China, Japan, and UK have substantial symbolic significance along with usefulness attached to their satellites stationed in space. Thus, a direct or indirect attack on these satellites will have emblematic repercussions. Another symbolic link of space terrorism will be the terrorist attack itself. The first hijacking of an El AI commercial flight by Popular Front for the Liberation of Palestine (PFLP) on July 23, 1968 shook the world. A space attack carried out for the first time would generate sufficient havoc to attract unprecedented media coverage and make nations to urgently deliberate a possible means to stop such attacks in future.

The second factor that makes the primary space actors a potential target is their dependency on space technology. America’s “Operation Desert Storm” carried out against Saddam Hussain revealed to the world its dependency on space technology.14 Its heavy reliance on GPS to navigate its troops through Iraq demonstrated that a victory without the help of space technology would have been impossible. Similarly, Washington’s use of thirteen satellites to send out three-dimensional triangularized locations is susceptable to attack by the terrorists organizations. Without much difficulty these organizations can develop jamming systems that may be capable of misguiding US missiles. In recent years, US military has spent millions to decrease this dependency but without much success.15 This dependence on space-enabled technology, connectivity and services is not just limited to the US. Many states in the European Union have increased their reliance on space services. This dependency link makes the key space players more susceptible to attacks by the terrorist.

#### Groups will develop and deploy ASATs – direct attacks are impossible to prevent

Greenbaum 1/8 [(Prof. Dov Greenbaum is the director of the Zvi Meitar Institute for Legal Implications of Emerging Technologies at the Harry Radzyner Law School, at IDC Herzliya) “Who is going to stop space terrorists?” CTech, 1/8/2022. https://www.calcalistech.com/ctech/articles/0,7340,L-3926737,00.html] BC

A third way that terrorists could threaten space resources is through a direct in-space attack on a spacecraft. Arguably, this might be the most difficult to prevent. The Union of Concerned Scientists has thoroughly documented the numerous continuing efforts by nation states, stretching back more than half a century, to develop destructive anti-satellite weapons (ASATs). These were often overt programs: in 1964 U.S. President Lyndon Johnson gave a speech describing American efforts to counter potential bomb-carrying Soviet satellites, effectively publicly launching Program 437, a nuclear ASAT system. There has subsequently been a resurgence in ASAT efforts worldwide since the 2000s, which may or may not include the US Air Force’s secretive X-37B mini shuttle as well as ground-based ASAT lasers.

The U.S. isn’t alone in developing these anti-satellite technologies. In 2007 China used a ground-based missile to destroy an aging weather satellite. In 2019, India’s Mission Shakti similarly used a missile in a controversial proof-of-concept test to destroy a test satellite 300 km above Earth. And Russia has also been testing ASATs for some time, most recently in November 2021, where is destroyed the Kosmos 1408 satellite and created an enormous cloud of at least 1,500 pieces of space debris that directly threatened the integrity of the International Space Station and the safety of its crew.

However, not all ASATs are souped up ballistic missiles. In 2019, Russia launched an exotic nesting doll satellite, Kosmos 2542, which seemed to birth new smaller satellites in orbit, thought to be usable as potential kinetic weapons against U.S. interests in space. And, there is fear that a rogue nation like North Korea could detonate a nuclear weapon in space, creating a nuclear electromagnetic pulse (EMP) whose electromagnetic radiation could knock nearby satellites offline.

Space used to be the domain of nation states and so far, only the aforementioned four countries have demonstratable ASAT capabilities, but commercial actors are increasingly the dominant players and their technology can potentially be used for malicious intent by non-state actors. With plummeting costs, a terror group doesn’t even need to be that well financed to place a crude but effective ASAT threat in space. Small, customizable satellites can be purchased essentially off the shelf, and they can then be booked onto one of many charter flights, such as SpaceX Rideshare Program, for relatively reasonable costs. While there is national and international regulatory oversight to license, register and confirm the nature of these satellites, some companies have already evaded that oversight and successfully snuck into space without government authorization. “If it was possible for an American company to place in the orbit unlicensed satellites, it seems, that any other agent … could do the same.”

Once in space, even these small satellites could be maneuvered to crash into other space crafts, directly creating havoc and damage and perhaps even setting off a chain reaction of destruction.

While some of these terrorist threats described herein are less likely, others have been proven to work. And if the aim of terrorist organizations is to terrorize, causing any sort of harm in space, even if its only to smaller, less valuable, satellites, it is scary enough.

#### Space terrorism primes states for attack – disrupts telecommunications, hijacking sensitive location data, and military secrets

Kwok 9/9 [(Andre, an Asian studies and law student at The Australian National University.) “The growing threat of cybercrime in the space domain” East Asia Forum, 9/9/2021. https://www.eastasiaforum.org/2021/09/09/the-growing-threat-of-cybercrime-in-the-space-domain/] BC

In July 2021, Richard Branson made global headlines with his journey to outer space on Virgin Galactic’s spaceship. This historical feat proved the feasibility of space tourism and the many interests of corporations in outer space. As a major non-state actor, corporations have joined the increasingly crowded space domain, prompting new discussions on regulating commercial, military and technological activities in outer space.

The conversation on non-state actors often focuses on corporations, overlooking illegitimate non-state actors like terrorists and transnational organised crime groups. In the post-9/11 world, illegitimate non-state actors have caused much strain on international law. Reflecting the growing space sector, terrorist acquisition of space-applicable cyberattack tools will further test international law.

In 2007, Sri Lanka’s Tamil Tigers rebel group hijacked an Intelsat satellite to broadcast ethno-nationalist propaganda to Europe and Asia. Representing Sri Lanka’s Tamil minority population, the Tamil Tigers fought a devastating civil war with the Sri Lankan military that led to extensive war crimes and crimes against humanity.

The Tamil Tigers exploited a vacant ku-band transponder to broadcast political messages for over a year. Experts suggest such incidents could potentially become more frequent in the region as signal piracy and jamming capabilities become more advanced. This corresponds with increasing access to satellite television and greater technical expertise. Intelsat Executive Vice-President Phillip Spector responded that ‘Intelsat does not tolerate terrorists or others operating illegally on its satellites’.

The Tamil Tiger’s success in compromising the world’s largest commercial satellite operator at the time signalled a step up from conventional sea piracy to space-based cyberattack. Although the Sri Lankan Civil War ended in 2009, this case points to an emerging new grouping of non-state actors possessing political interests in controlling long-range telecommunications and developing sophisticated hacking competencies.

Given the enormous reliance on space-based technologies, satellite jamming can have catastrophic effects. Motivated by extremist ideology, a successful terrorist cyberattack today could lead to unprecedented havoc involving denial-of-service attacks on critical space infrastructure, hijacking sensitive location data, capturing military base locations and troop positioning imagery. The vast scale of global disorder triggered by terrorist acquisition of satellites can range from disabling essential telecommunications to triggering a disastrous financial crisis.

Although the Tamil’s Tiger’s satellite hijacking occurred over a decade ago, modern satellites are still highly vulnerable to jamming and cyber security attacks. Many world-class satellites and military technologies are susceptible to low-cost and commercially available jamming tools. Once the initial jamming and spoofing is developed, it is inexpensive to mass-produce and becomes easily available to non-state actors, including terrorists.

Corporations and states continue to pursue ambitious space projects. Similarly, the United Nations announced that terrorists have become increasingly innovative in integrating long-range telecommunications, artificial intelligence and social media to strengthen their activities. There is a dire need for space policymakers to revisit encryption protocols and cybersecurity technologies in critical space infrastructure.

In recent years, with the growing affordability of space technologies alongside the growing participation of corporations and non-government organisations, the notion of the ‘democratisation of space’ has come into the public eye. This paradigm shift will realise greater space accessibility for humanity, undoing the previous reality of exclusive access by global superpowers and wealthy corporations. This is reinforced by the UN Space Benefits Declaration, which stresses cooperation and equity in outer space.

Paradoxically, this envisioned open-access domain forms a launchpad for terrorists. Consequently, this illustrates new regulatory challenges amid space democratisation and an increasing awareness that non-state actors in the space domain are not always ‘good’. Governments should consider dedicated transparency and confidence building measures. This could consist of increased information sharing systems mapping the emerging cyber-capabilities of terrorist groups between countries alongside agreed minimal cybersecurity standards. Besides the clear priority to bolster cybersecurity in outer space, thwarting cyberterrorism must be a cooperative effort.

The growing involvement of non-state actors in space raises questions about how the current international legal order — involving the core five space treaties, including the Moon Agreement with limited signatories — applies to violent non-state actors. It also raises key questions about how the non-concessions principle of ‘we do not negotiate with terrorists’ applies to outer space terrorism.

Although the greater inclusion afforded by space democratisation is essential, a greater balancing act is needed to moderate newer participants in the space domain. The international community should not let corporate technological progress overshadow the potential dangers posed by illegitimate non-state actors in the space domain. Considering the stakes, if this not adequately addressed, space terrorism risks disastrous consequences.

#### Loss of satellites causes economic collapse

Fernholz 20 [(Tim, covers space, the economy and geopolitics for Quartz. He is the author of "Rocket Billionaires: Elon Musk, Jeff Bezos and the New Space Race.") “The entire global financial system depends on GPS, and it’s shockingly vulnerable to attack” Quartz, last updated 6/24/2020. https://qz.com/1106064/the-entire-global-financial-system-depends-on-gps-and-its-shockingly-vulnerable-to-attack/] BC

There is an enormous, invisible clock that keeps ultra-precise time, can be checked from anywhere on earth, and is free for everyone to use. This technological gift to humanity was built by the US government. It is called the Global Positioning System (GPS), it lives in space, and you use it every time you check the map on your phone.

What you may not know is that you rely on it far more often than that. Cell towers use it to route your phone calls, ATMs and cash registers use it for your transactions, electrical grids use it to send power to your house, and stock exchanges use it to regulate the trades that go into your stock portfolio or investment fund. And it is far more vulnerable to attack and disruption than most people know or are willing to admit.

“When we talk about economic infrastructure, I don’t think the general public realizes the extent to which the Global Positioning System’s timing signal is critical for these ATM transactions and every other point-of-sale transaction conducted in the United States and throughout most of the world,” Michael Griffin, a former NASA administrator, told US space policymakers in early October. “To what extent do we believe that we have defended ourselves if an adversary can bring our economic system near collapse?”

Time, as it turns out, is money, in a very literal sense. Since digital money moves faster than humans can think, banks and regulators alike rely on time stamps to monitor transactions, catch fraud, and make sure the right people get paid. When you pull cash from an ATM or swipe your card at the coffee shop, the machine needs to determine the precise time that the transaction occurs to, for example, prevent it from being over-drawn.

Putting a little clock in the credit-card machines wouldn’t work, because over time, even the most precise clocks start to differ from one another. That doesn’t matter when you’re meeting me for lunch at noon, but if you’re timing transactions down to the microsecond standard now used in many electronic networks, tiny differences can screw up your whole operation.

What makes the Global Positioning System so crucial, then, isn’t in fact the “positioning” part; it’s the ability to make machines all over the planet agree on exactly what time it is.

Developed and launched by the US military in the 1980s, GPS became fully operational in 1993. Today it consists of 31 satellites. Each satellite contains an atomic clock, which is synced regularly with high-precision timing devices at the US Naval Observatory. Phones, ATMs and other devices can pick up the timing signals from three or four satellites, and use the knowledge of exactly when each signal was sent to triangulate their position on earth.

Besides providing the military with better way-finding, the ubiquitous timing signal became a public good used by numerous private industries. “Why wouldn’t you use it?” Dana Goward, the president of the Resilient Navigation and Timing Foundation, says. “It’s really, really good, you don’t have to pay a license fee, and it’s global.”

While the US GPS constellation is the preeminent source of this data, other nations have launched similar constellations: Russia’s GLONASS, China’s BeiDou and Europe’s Galileo, along with smaller regional services, offer a similar signal under the rubric of “GNSS”—Global Navigation Satellite System.

It’s hard to find important digital infrastructure that doesn’t rely on GNSS. Because radio spectrum for mobile communications is limited, cellular phones and towers can’t just broadcast directly to each other; there’d be a data pile-up. Instead, these networks use the space efficiently by precisely timing bursts of communication back and forth, introducing intervals too short for people to notice. Even wired networks need to agree on precise timing to operate at full capacity.

The New York Stock Exchange relies on a set of GNSS antennae on the roof of its New Jersey server farm to time financial transactions, including those performed automatically by computers. Investors have spent millions improving their algorithms and communications systems to execute trades a few microseconds faster than their competitors, but all that would be for nought if they couldn’t agree on precisely what time each trade happened.

Even the modern electrical grid relies on ultra-precise synchronization to deliver power to high-demand areas at just the right time to prevent a blackouts without causing a dangerous power surge. And all that is before we get into the more obvious uses of GNSS technology to guide transportation of all kinds, from cars and delivery trucks to airplanes and container ships.

#### Economic decline causes great power war.

Qian **Liu 18**. China-based economist. “From economic crisis to World War III.” Project Syndicate. 11-8-2018. <https://www.project-syndicate.org/commentary/economic-crisis-military-conflict-or-structural-reform-by-qian-liu-2018-11>, accessed 7-17-2021

The next economic crisis is closer than you think. But what you should really worry about is what comes after: in the **current social, political, and technological landscape**, a **prolonged economic crisis**, combined with rising income inequality, could well escalate into a **major global military conflict**. The 2008-09 global financial crisis almost bankrupted governments and caused systemic collapse. Policymakers managed to pull the global economy back from the brink, using massive monetary stimulus, including **q**uantitative **e**asing and near-zero (or even negative) interest rates. But monetary stimulus is like an adrenaline shot to jump-start an arrested heart; it can revive the patient, but it does nothing to cure the disease. Treating a sick economy requires structural reforms, which can cover everything from financial and labour markets to tax systems, fertility patterns, and education policies. Policymakers have utterly failed to pursue such reforms, despite promising to do so. Instead, they have remained preoccupied with politics. From Italy to Germany, forming and sustaining governments now seems to take more time than actual governing. Greece, for example, has relied on money from international creditors to keep its head (barely) above water, rather than genuinely reforming its pension system or improving its business environment. The lack of structural reform has meant that the unprecedented excess liquidity that central banks injected into their economies was not allocated to its most efficient uses. Instead, it raised global asset prices to levels even higher than those prevailing before 2008. In the United States, housing prices are now 8% higher than they were at the peak of the property bubble in 2006, according to the property website Zillow. The price-to-earnings (CAPE) ratio, which measures whether stock-market prices are within a reasonable range, is now higher than it was both in 2008 and at the start of the Great Depression in 1929. As monetary tightening reveals the vulnerabilities in the real economy, the collapse of asset-price bubbles will trigger another economic crisis – one that could be even more severe than the last, because we have built up a tolerance to our strongest macroeconomic medications. A decade of regular adrenaline shots, in the form of ultra-low interest rates and unconventional monetary policies, has severely depleted their power to stabilise and stimulate the economy. If history is any guide, the consequences of this mistake could extend far beyond the economy. According to Harvard’s Benjamin Friedman, **prolonged periods of economic distress** have been characterised also by public **antipathy toward minority groups or foreign countries** – attitudes that can help to **fuel unrest**, **terrorism**, or even **war**. For example, during the Great Depression, US President Herbert Hoover signed the 1930 **Smoot-Hawley** Tariff Act, intended to protect American workers and farmers from foreign competition. In the subsequent five years, global trade shrank by two-thirds. Within a decade, **World War II** had begun. To be sure, WWII, like World War I, was caused by a multitude of factors; there is no standard path to war. But there is reason to believe that high levels of inequality can play a significant role in stoking conflict. According to research by the economist Thomas **Piketty**, a spike in income inequality is often followed by a great crisis. Income inequality then declines for a while, before rising again, until a new peak – and a new disaster. Though causality has yet to be proven, given the limited number of data points, this correlation should not be taken lightly, especially with wealth and income inequality at historically high levels. This is all the more worrying in view of the numerous other factors stoking social unrest and diplomatic tension, including technological disruption, a record-breaking migration crisis, anxiety over globalisation, political polarisation, and rising nationalism. All are symptoms of failed policies that could turn out to be trigger points for a future crisis. Voters have good reason to be frustrated, but the emotionally appealing **populists** to whom they are increasingly giving their support are offering ill-advised solutions that will **only make matters worse**. For example, despite the world’s unprecedented interconnectedness, **multilateralism is increasingly being eschewed**, as countries – most notably, Donald J. Trump’s US – pursue unilateral, isolationist policies. Meanwhile, **proxy wars** are **raging in Syria and Yemen**. Against this background, we must take seriously the possibility that the **next economic crisis could lead to a large-scale military confrontation**. By the logic of the political scientist Samuel Huntington, considering such a scenario could help us avoid it because it would force us to take action. In this case, the key will be for policymakers to pursue the structural reforms that they have long promised while replacing finger-pointing and antagonism with a sensible and respectful global dialogue. The alternative may well be global conflagration.

#### Hacking causes terrestrial nuclear terror and miscalculation

NTI 19 [(The Nuclear Threat Initiative is a nonprofit, nonpartisan global security organization focused on reducing nuclear and biological threats imperiling humanity.) “Addressing Cyber-Nuclear Security Threats” Nuclear Threat Initiative, last updated 2/14/2019. https://www.nti.org/about/programs-projects/project/addressing-cyber-nuclear-security-threats/] BC

What if a hacker shut down the security system at a highly sensitive nuclear materials storage facility, giving access to terrorists seeking highly enriched uranium to make a bomb? What if cyber-terrorists seized control of operations at a nuclear power plant–enabling a Fukushima-scale meltdown? Or, worse, what if hackers spoofed a nuclear missile attack, forcing a miscalculated retaliatory strike that could kill millions?

The cyber threat affects nuclear risks in at least two ways: It can be used to undermine the security of nuclear materials and facility operations, and it can compromise nuclear command and control systems.

Traditional nuclear security practices have been focused on preventing physical attacks—putting in place “guns, guards, and gates” to prevent 1) theft of materials to build a bomb, 2) sabotage of a nuclear facility, or 3) unauthorized access of nuclear command, control, and communications systems. Important progress has been made in this “traditional” nuclear security arena, but the threat of a cyber attack is escalating. All countries are vulnerable, and nuclear cybersecurity practices haven’t caught up to the risk.

Across the nuclear sector worldwide, the technical capacity to address the cyber threat is extremely limited, even in countries with advanced nuclear power and research programs. Measures to guard against the cyber-nuclear threat are virtually non-existent in states with new or emerging nuclear programs. Expertise in the field of nuclear cybersecurity is in short-supply, and the International Atomic Energy Agency (IAEA), which provides countries with assistance and training in this area, does not have the resources necessary to address the growing threat.

The threat extends to the command, control, and communications (NC3) for nuclear weapons. Even in the United States, officials have stated that it cannot be fully confident that these systems will operate as planned if attacked by a sophisticated cyber opponent. Such attacks could jeopardize the confidence of U.S. officials of our nuclear systems, lead to false warning or even potentially allow an adversary to take control of a nuclear weapons system.

Governments are working to understand and minimize these vulnerabilities, but cyber threats are becoming more sophisticated every day and those responsible—from policymakers to military officials to facility operators to regulators— are working to keep pace.

#### Nuclear terrorism forces inadvertent launch –escalates

Hayes 18 [(Peter, Director of the Nautilus Institute and Honorary Professor at the Centre for International Security Studies at the University of Sydney.) “NON-STATE TERRORISM AND INADVERTENT NUCLEAR WAR” Nautlus Institute, 1/18/2018. https://nautilus.org/napsnet/napsnet-special-reports/non-state-terrorism-and-inadvertent-nuclear-war/] BC

The first is that inadvertent nuclear war is possible, that is, the probability is greater than zero albeit unknowable. Multiple “threshold” events that could trigger inadvertent nuclear war are conceivable. In some unknowable combination, such drivers contribute to a probability greater than zero that nuclear war between states will occur, variously estimated at 0.1-1 percent year by strategic analysts—although there is no objective basis for such estimates, simply subjective estimates buttressed by the perception that specific near-nuclear wars punctuated the Cold War and post-Cold War decades, at which time the probability was perceived to be much higher for months at a time.

The second is that of all the drivers of inadvertent war, state-supported and non-state nuclear terrorism may be the least “directly controllable” by nuclear weapons states. Moreover, such nuclear terrorist attacks may coincide in the future with the influence of other drivers that could trigger rapid escalation to nuclear first use in conditions of complex nuclear confrontation involving two or more nuclear weapons states. Thus, the non-state terrorist driver of nuclear war may render “normal” positive and negative controls on nuclear use far less stabilizing than in the past when states were the sole concern in nuclear confrontations, depending on how a terrorist nuclear attack might affect the various contributing pathways to inadvertent nuclear war (listed in the next section).

The third is that such nuclear terrorist attacks may take many forms, as shown in Figure 1.

Figure 1: Types of Nuclear Terrorism from Least to Most Damaging

Notes to Figure 1: a credible threat not accompanied by one or more actions to realize the threat is the least damage act of terrorism, and rests on the perception of those threatened as to the perpetrator’s intention and capability. Many nuclear terrorism threats are made. Relatively few are credible. The types below “mere” threats are characterized by actions which may (or may not) have been preceded by credible threats. “Footloose” here is shorthand for loss of control of legitimate and authorized control entity, public or private, that is subject to diversion and seizure by a non-state entity. Cyber attacks may be part of the types of nuclear terrorism because a competent terrorist entity will employ cyberattacks as part of a nuclear terrorist attack. However, a cyber attack that disables critical infrastructure at the same time as another type of direct nuclear terrorist attack is conducted would be highly damaging and if it results of itself in mass casualties, may enable and amplify the consequences of dirty bomb or an actual nuclear detonation. In this sense, a cyber attack may be a cyber-multiplier for other types of nuclear terrorism. Of course, a cyber attack aimed at mass casualties and terrorist effects may be undertaken without any form of nuclear terrorism associated with it. Finally, acquisition of radioactive materials or fissile material may occur via theft, purchase, or self-manufacture (the least likely and most difficult of the three acquisition pathways). Some may argue that radiological weapons (dirty bombs) are not nuclear at all in that they do not involve criticality at all, just the radioactive properties of the materials, and may be relatively crude and low technology. However, some nuclear weapons aim to achieve precisely such radiological effects on varying scales and long-term radiological effects, rather than blast and other direct irradiation of targeted humans. Dirty bombs and nuclear bombs exist on a spectrum and where competent, malevolent, and motivated non-state actors might position themselves on that spectrum remains an open question.

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These many types of terrorist nuclear attack present states with starkly different potential damage, greater possible ambiguity or even opacity in terms of precursor indicators as well as identity of the perpetrator. Any of these types of attack may affect nuclear-armed states in unpredictable ways with respect to their own nuclear use decisions at times when inter-state conflict may be more or less likely. These various types of attack by non-state actors reduce into three basic categories of threat and use, as follows:

Credible threat of either nuclear detonation or radiological attack with possible massive damages

Actual or sub-critical nuclear detonation

Actual spent fuel or reactor attack with substantial radiological release.

In turn, such categories of terrorist attack might be realized in or against one or more types of targeted state, viz, a nuclear armed state, a nuclear umbrella state that receives nuclear extended deterrence from a nuclear armed state, or a non-nuclear weapons state which may or may not have nuclear fuel cycle facilities in and/or fissile material stored on its territory. (Thus, the target may or may not be a state, a state agency, or a state facility—it might be a civilian target such as a company or a religious entity; but in this paper, all terrorist nuclear attacks are assumed to take place only in places controlled by functioning states).

Nuclear terrorism post-cold war: trigger for inadvertent nuclear war?

The possible catalytic effect of nuclear terrorism on the risk of state-based nuclear war is not a simple linkage. The multiple types and scales of nuclear terrorism may affect state-nuclear use decisions along multiple pathways that lead to inadvertent nuclear war. These include:

Early warning systems fail or are “tripped” in ways that lead to launch-on-warning

Accidental nuclear detonation, including sub-critical explosions.

Strategic miscalculation in crisis, show of force

Decision-making failure (such as irrational, misperception, bias, degraded, group, and time-compressed decision-making)

Allied or enemy choices (to seek revenge, to exploit nuclear risk, to act out of desperation)

Organizational cybernetics whereby a nuclear command-control-and communications (NC3) system generates error, including the interplay of national NC3 systems in what may be termed the meta-NC3 system.

Synchronous and coincident combinations of above.[4]

Exactly how, where, and when nuclear terrorism may “ambush” nuclear armed states already heading for or on such a path to inadvertent nuclear war depends on who is targeting whom at a given time, either immediately due to high tension, or generally due to a structural conflict between states. Nuclear armed states today form a complex set of global threat relationships that are not distributed uniformly across the face of Earth. Rather, based on sheer firepower and reach, the nine nuclear weapons states form a global hierarchy with at least four tiers, viz:

Tier 1: United States, clear technological supremacy and qualitative edge.

Tier 2: Russia, China, global nuclear powers and peers with the United States due to the unique destructive power of even relatively small nuclear arsenals, combined with global reach of missile and bomber delivery systems, thereby constituting a two-tiered global “nuclear triangle” with the United States

Tier 3: France, UK, NATO nuclear sharing and delivery NATO members (Belgium, Germany, Italy, the Netherlands and Turkey) and the NATO and Pacific nuclear umbrella states (Japan, South Korea, Australia) that depend on American nuclear extended deterrence and directly and indirectly support US and US-allied nuclear operations even though they do not host nor deliver nuclear weapons themselves.

Tier 4: India, Pakistan, Israel, DPRK.

The first two tiers constitute the global nuclear threat triangle that exists between the United States, Russia, and China, forming a global nuclear “truel.” Each of these states targets the others; each represents an existential threat to the other; and each has a long history of mutual nuclear threat that is now a core element of their strategic identity.

Tier three consists of states with their own nuclear force but integrated with that of the United States (even France!) that expand the zone of mutual nuclear threat over much of the northern and even parts of the southern hemisphere; and states that host American nuclear command, control, communications, and intelligence systems that support US nuclear operations and to whom nuclear deterrence is “extended” (if, for example, Australia’s claim to having an American nuclear umbrella is believed). The fourth tier is composed of smaller nuclear forces with a primarily regional reach and focus.

Between most of these nuclear armed states and across the tiers, there are few shared “rules of the road.” The more of these states that are engaged in a specific conflict and location, the more unpredictable and unstable this global nuclear threat system becomes, with the potential for cascading and concatenating effects. Indeed, as the number of nuclear states projecting nuclear threat against each other increases, the notion of strategic stability may lose all meaning.

The emergence of a fifth tier—of non-state actors with the capacity to project nuclear threat against nuclear-armed and nuclear umbrella states (although not only these states)—is a critically important possible catalytic actor in the new conditions of nuclear threat complexity that already exist today. Such a layer represents an “edge of chaos” where the attempts by nuclear armed states to exert absolute “vertical” control over the use of nuclear weapons confront the potential of non-state entities and even individuals (insiders) to engage in “horizontal” nuclear terrorism, presenting radically different control imperatives to the standard paradigm of organizational procedures, technical measures, and safeguards of various kinds. This tier is like the waves and tides on a beach that quickly surrounds and then causes sand castles to collapse.

In 2010, Robert Ayson reviewed the potential linkages between inter-state nuclear war and non-state terrorism. He concluded: “…[T]hese two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them.”[5] How this linkage might unfold is the subject of the next sections of this essay.

#### Independently, it causes nuclear war – inadvertent launch is more likely when tensions are already high

Barrett et al. 13 [(Anthony, visiting Scholar with the Center for Long-Term Cybersecurity (CLTC) at UC Berkeley, and a Senior Policy Analyst at the Berkeley Existential Risk Initiative (BERI). I am also Co-Founder and Director of Research of the Global Catastrophic Risk Institute (GCRI). I was recently Lead for the Advanced Analytics – Machine Learning area in ABS Group’s Product Development and Innovation (PD&I) Center. I am a senior risk and policy analyst based in the Washington, D.C. area, focusing on risk assessment, risk management, and public policies in a wide variety of homeland security risk areas and other catastrophic-risk domains. I have over 20 years experience on a range of topics including machine learning / artificial intelligence systems, cybersecurity, predictive analytics, natural language processing (NLP) / text analytics, project management, product development, risk models, decision analyses, qualitative and quantitative expert elicitation methods, statistical analyses, simulation models, event consequence models, model validation and verification, cost-effectiveness and benefit-cost analyses, and other methods of informing risk-management policy decisions.) “Analyzing and Reducing the Risks of Inadvertent Nuclear War Between the United States and Russia” Science & Global Security, 2013. https://scienceandglobalsecurity.org/archive/sgs21barrett.pdf] BC

War involving significant fractions of the U.S. and Russian nuclear arsenals, which are by far the largest of any nations, could have globally catastrophic effects such as severely reducing food production for years,1 potentially leading to collapse of modern civilization worldwide, and even the extinction of humanity.2 Nuclear war between the United States and Russia could occur by various routes, including accidental or unauthorized launch; deliberate first attack by one nation; and inadvertent attack. In an accidental or unauthorized launch or detonation, system safeguards or procedures to maintain control over nuclear weapons fail in such a way that a nuclear weapon or missile launches or explodes without direction from leaders. In a deliberate first attack, the attacking nation decides to attack based on accurate information about the state of affairs. In an inadvertent attack, the attacking nation mistakenly concludes that it is under attack and launches nuclear weapons in what it believes is a counterattack.3 (Brinkmanship strategies incorporate elements of all of the above, in that they involve intentional manipulation of risks from otherwise accidental or inadvertent launches.4)

Over the years, nuclear strategy was aimed primarily at minimizing risks of intentional attack through development of deterrence capabilities, and numerous measures also were taken to reduce probabilities of accidents, unauthorized attack, and inadvertent war. For purposes of deterrence, both U.S. and Soviet/Russian forces have maintained significant capabilities to have some forces survive a first attack by the other side and to launch a subsequent counter-attack. However, concerns about the extreme disruptions that a first attack would cause in the other side’s forces and command-and-control capabilities led to both sides’ development of capabilities to detect a first attack and launch a counter-attack before suffering damage from the first attack.5

Many people believe that with the end of the Cold War and with improved relations between the United States and Russia, the risk of East-West nuclear war was significantly reduced.6 However, it also has been argued that inadvertent nuclear war between the United States and Russia has continued to present a substantial risk.7 While the United States and Russia are not actively threatening each other with war, they have remained ready to launch nuclear missiles in response to indications of attack.8

False indicators of nuclear attack could be caused in several ways. First, a wide range of events have already been mistakenly interpreted as indicators of attack, including weather phenomena, a faulty computer chip, wild animal activity, and control-room training tapes loaded at the wrong time.9 Second, terrorist groups or other actors might cause attacks on either the United States or Russia that resemble some kind of nuclear attack by the other nation by actions such as exploding a stolen or improvised nuclear bomb,10 especially if such an event occurs during a crisis between the United States and Russia.11 A variety of nuclear terrorism scenarios are possible.12 Al Qaeda has sought to obtain or construct nuclear weapons and to use them against the United States.13 Other methods could involve attempts to circumvent nuclear weapon launch control safeguards or exploit holes in their security.14

It has long been argued that the probability of inadvertent nuclear war is significantly higher during U.S.–Russian crisis conditions,15 with the Cuban Missile Crisis being a prime historical example. It is possible that U.S.–Russian relations will significantly deteriorate in the future, increasing nuclear tensions. There are a variety of ways for a third party to raise tensions between the United States and Russia, making one or both nations more likely to misinterpret events as attacks.16

#### Nuclear war causes extinction – famine and climate change

Starr 15 [(Steven, Director of the University of Missouri’s Clinical Laboratory Science Program and a senior scientist at the Physicians for Social Responsibility) “Nuclear War, Nuclear Winter, and Human Extinction,” Federation of American Scientists, 10/14/2015] DD  
While it is impossible to precisely predict all the human impacts that would result from a nuclear winter, it is relatively simple to predict those which would be most profound. That is, a nuclear winter would cause most humans and large animals to die from nuclear famine in a mass extinction event similar to the one that wiped out the dinosaurs.

Following the detonation (in conflict) of US and/or Russian launch-ready strategic nuclear weapons, nuclear firestorms would burn simultaneously over a total land surface area of many thousands or tens of thousands of square miles. These mass fires, many of which would rage over large cities and industrial areas, would release many tens of millions of tons of black carbon soot and smoke (up to 180 million tons, according to peer-reviewed studies), which would rise rapidly above cloud level and into the stratosphere. [For an explanation of the calculation of smoke emissions, see Atmospheric effects & societal consequences of regional scale nuclear conflicts.]

The scientists who completed the most recent peer-reviewed studies on nuclear winter discovered that the sunlight would heat the smoke, producing a self-lofting effect that would not only aid the rise of the smoke into the stratosphere (above cloud level, where it could not be rained out), but act to keep the smoke in the stratosphere for 10 years or more. The longevity of the smoke layer would act to greatly increase the severity of its effects upon the biosphere.

Once in the stratosphere, the smoke (predicted to be produced by a range of strategic nuclear wars) would rapidly engulf the Earth and form a dense stratospheric smoke layer. The smoke from a war fought with strategic nuclear weapons would quickly prevent up to 70% of sunlight from reaching the surface of the Northern Hemisphere and 35% of sunlight from reaching the surface of the Southern Hemisphere. Such an enormous loss of warming sunlight would produce Ice Age weather conditions on Earth in a matter of weeks. For a period of 1-3 years following the war, temperatures would fall below freezing every day in the central agricultural zones of North America and Eurasia. [For an explanation of nuclear winter, see Nuclear winter revisited with a modern climate model and current nuclear arsenals: Still catastrophic consequences.]

Nuclear winter would cause average global surface temperatures to become colder than they were at the height of the last Ice Age. Such extreme cold would eliminate growing seasons for many years, probably for a decade or longer. Can you imagine a winter that lasts for ten years?

The results of such a scenario are obvious. Temperatures would be much too cold to grow food, and they would remain this way long enough to cause most humans and animals to starve to death.

Global nuclear famine would ensue in a setting in which the infrastructure of the combatant nations has been totally destroyed, resulting in massive amounts of chemical and radioactive toxins being released into the biosphere. We don’t need a sophisticated study to tell us that no food and Ice Age temperatures for a decade would kill most people and animals on the planet.  Would the few remaining survivors be able to survive in a radioactive, toxic environment?

### 1AC – Plan

#### Resolved: Violent non-state actors should not appropriate outer space.

#### Violent non state actors are

Finabel 7/6 [(Finabel, a European organisation for the promotion of cooperation and interoperability between the national armies of the member states of the European Union.) “Interoperability is Vital to Combat Violent Non-State Actors” European Army Interoperability Centre, 7/6/2021. https://finabel.org/interoperability-is-vital-to-combat-violent-non-state-actors/ https://finabel.org/interoperability-is-vital-to-combat-violent-non-state-actors/] BC

Definition of Violent Non-State Actors

After the collapse of the Soviet Union, warfare, and hence defence missions, became increasingly defined by threats posed by violent non-state actors. VNSAs threaten public safety, governmental authority, and international security in the form of terrorist groups, warlords, militias, criminal organisations, and paramilitary forces (Williams 4, 2008). The term “violent non-state actor” indicates the establishment of an organisational structure outside of national and international governance structures, ranging from highly organised paramilitary forces, over more loosely affiliated terrorist organisations, to small groups or single actors driven by fundamentalist ideology to commit violent acts (Hofmann 27, 2012). Today, the internal organisation of VNSAs, the coordination of terrorist acts, and the recruitment of new affiliates is aided by the use of publicly available encrypted messaging services (Graham 21, 2016).

Further, VNSAs are defined by their tactics of employing violent means to disturb public peace and challenge nation-states, with their attacks being directed towards representatives of nation-states – embassies, military bases, government buildings, and public and military service members, such as the 2012 Benghazi attack against US government facilities in Libya – as well towards the public, such as the 9/11 Attacks or the November 2015 Paris Attacks. VNSAs often employ a combination of professional military training and tactics together with improvised weapons, such as improvised explosive devices (IED), that are more cost-efficient and harder to monitor than traditional weapon systems (Department of Homeland Security, 2021).

Given their obscure organisational structure, secretive communication channels aided by encrypted messaging services, and the usage of improvised weapons, VNSAs constitute a high-risk security threat that is difficult to monitor and combat.

#### Debris and nonfunctional objects constitute appropriation – both are results of terror attacks

Muñoz-Patchen 18 [(Chelsea, J.D. Candidate, 2019, The University of Chicago Law School.) “Regulating the Space Commons: Treating Space Debris as Abandoned Property in Violation of the Outer Space Treaty” Chicago Journal of International Law, 2018. https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1741&context=cjil] BC

Failing to Clean Up Space Debris Violates These Legal Principles

If one considers the orbital space taken up by debris and the collision threat posed by debris, it becomes hard to claim that states are not violating the basic norms of spacefaring. Debris and other nonfunctional objects serving no useful purpose take up orbital space, which could be used by other nations. If, or when, the Kessler Syndrome cascade is reached, the contributing nations will have made segments of Earth’s orbit unusable for any nation. Thus, according to some scholars, the very existence of space debris is illegal internationally according to the initial Outer Space Treaty of 1967.147 They suggest that this treaty, which “states that all activities must be carried on for the ‘benefit and interests of all countries,’ and that outer space shall never be subject to national appropriation” is now part of customary international space law.148 They argue that leaving space debris violates

Principle 21 of the 1972 Stockholm Declaration which allows states to exploit their resources pursuant to their own environmental policies, provided that their activities do not cause damage to areas beyond their national jurisdiction. Thus, a defunct satellite or space debris left behind in any orbit violates the Outer Space Treaty because: (a) it does not produce a benefit for mankind; (b) its use is not in the interest of all countries; and (c) it occupies a portion of space, causing national appropriation.149

Even short of a cascade removing or limiting the availability of space debris can, and indeed has, begun to affect the use of space. As described earlier, debris has caused the ISS and other space objects to use fuel to avoid collisions or risk the destruction of their craft and loss of life.150 There is already crowding in the geostationary orbit, used especially for communications satellites, causing fear of collisions and signal overlap.151 Initial access to space has been delayed because the launches of new spacecraft have had to be held back due to the risk of debris in their path.152 Other protective measures that spacefaring nations are contemplating include launching with more fuel to allow for avoidance maneuvers and protective shields—both of which cost money and add extra weight, requiring more fuel.153 These protective measures, which must be added due to the conduct of existing spacefaring nations, serve as an extra barrier to space access by increasing the cost of space operations.

Thus, states creating debris violate other nations’ right to use space as enshrined in the space treaty regime, and they violate their own obligations to not appropriate space.

### 1AC – Framing

**The standard is maximizing expected wellbeing**

**First, pleasure and pain are intrinsically valuable. People consistently regard pleasure and pain as good reasons for action, despite the fact that pleasure doesn’t seem to be instrumentally valuable for anything.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues**.** This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative.2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values**.** If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable**.** You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good.3 As Aristotle observes**:** “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value.

**Moreover, *only* pleasure and pain are intrinsically valuable. All other values can be explained with reference to pleasure; Occam’s razor requires us to treat these as instrumentally valuable.**

**Moen 16** [Ole Martin Moen, Research Fellow in Philosophy at University of Oslo “An Argument for Hedonism” Journal of Value Inquiry (Springer), 50 (2) 2016: 267–281] SJDI

I think several things should be said in response to Moore’s challenge to hedonists. First, **I do not think the burden of proof lies on hedonists to explain why the additional values are not intrinsic values. If someone claims that X is intrinsically valuable, this is a substantive, positive claim, and it lies on him or her to explain why we should believe that X is in fact intrinsically valuable.** Possibly, this could be done through thought experiments analogous to those employed in the previous section. Second, **there is something peculiar about the list of additional intrinsic values** that counts in hedonism’s favor**: the listed values have a strong tendency to be well explained as things that help promote pleasure and avert pain.** To go through Frankena’s list, life and consciousness are necessary presuppositions for pleasure; activity, health, and strength bring about pleasure; and happiness, beatitude, and contentment are regarded by Frankena himself as “pleasures and satisfactions.” The same is arguably true of beauty, harmony, and “proportion in objects contemplated,” and also of affection, friendship, harmony, and proportion in life, experiences of achievement, adventure and novelty, self-expression, good reputation, honor and esteem. Other things on Frankena’s list, such as understanding, **wisdom, freedom, peace, and security, although they are perhaps not themselves pleasurable, are important means to achieve a happy life, and as such, they are things that hedonists would value highly.** **Morally good dispositions and virtues, cooperation, and just distribution of goods and evils, moreover, are things that, on a collective level, contribute a happy society, and thus the traits that would be promoted and cultivated if this were something sought after.** To a very large extent, the intrinsic values suggested by pluralists tend to be hedonic instrumental values. Indeed, pluralists’ suggested intrinsic values all point toward pleasure, for while the other values are reasonably explainable as a means toward pleasure, pleasure itself is not reasonably explainable as a means toward the other values. Some have noticed this. Moore himself, for example, writes that though his pluralistic theory of intrinsic value is opposed to hedonism, its application would, in practice, look very much like hedonism’s: “Hedonists,” he writes “do, in general, recommend a course of conduct which is very similar to that which I should recommend.”24 Ross writes that “[i]t is quite certain that by promoting virtue and knowledge we shall inevitably produce much more pleasant consciousness. These are, by general agreement, among the surest sources of happiness for their possessors.”25 Roger Crisp observes that “those goods cited by non-hedonists are goods we often, indeed usually, enjoy.”26 What Moore and Ross do not seem to notice is that their observations give rise to two reasons to reject pluralism and endorse hedonism. The first reason is that if **the suggested non-hedonic intrinsic values are potentially explainable by appeal to just pleasure and pain** (which, following my argument in the previous chapter, we should accept as intrinsically valuable and disvaluable), **then—by appeal to Occam’s razor—we have at least a pro tanto reason to resist the introduction of any further intrinsic values and disvalues. It is ontologically more costly to posit a plurality of intrinsic values and disvalues, so in case all values admit of explanation by reference to a single intrinsic value and a single intrinsic disvalue, we have reason to reject more complicated accounts.** **The fact that suggested non-hedonic intrinsic values tend to be hedonistic instrumental values does not, however, count in favor of hedonism solely in virtue of being most elegantly explained by hedonism; it also does so in virtue of creating an explanatory challenge for pluralists.** The challenge can be phrased as the following question: **If the non-hedonic values suggested by pluralists are truly intrinsic values in their own right, then why do they tend to point toward pleasure and away from pain?**27

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

**Reducing the risk of extinction is always priority number one.   
Bostrom 12** [Faculty of Philosophy and Oxford Martin School, University of Oxford.], Existential Risk Prevention as Global Priority.  Forthcoming book (Global Policy). MP. http://www.existenti...org/concept.pdfEven if we use the most conservative of these estimates, which entirely ignores the   possibility of space colonization and software minds, **we find that the expected loss of an existential   catastrophe is greater than the value of 10^16 human lives**.  **This implies that the expected value of   reducing existential risk by a mere one millionth of one percentage point is at least a hundred times the   value of a million human lives.**  The more technologically comprehensive estimate of 10  54 humanbrain-emulation subjective life-years (or 10  52  lives of ordinary length) makes the same point even   more starkly.  Even if we give this allegedly lower bound on the cumulative output potential of a   technologically mature civilization a mere 1% chance of being correct, we find that the expected   value of reducing existential risk by a mere one billionth of one billionth of one percentage point is worth   a hundred billion times as much as a billion human lives. **One might consequently argue that even the tiniest reduction of existential risk has an   expected value greater than that of the definite provision of any ordinary good, such as the direct   benefit of saving 1 billion lives.**  And, further, that the absolute value of the indirect effect of saving 1  billion lives on the total cumulative amount of existential riskâ€”positive or negativeâ€”is almost   certainly larger than the positive value of the direct benefit of such an action.