## 1AC---UPS

### 1AC---Plan

#### Plan – States ought to expand the Public Trust Doctrine to reduce private actor appropriation of Outer Space.

#### Plan reduces appropriation and ensures sustainable development.

Babcock 19 (, H., 2019. THE PUBLIC TRUST DOCTRINE, OUTER SPACE, AND THE GLOBAL COMMONS: TIME TO CALL HOME ET. [online] Lawreview.syr.edu. Available at: <https://lawreview.syr.edu/wp-content/uploads/2019/09/H-Babcock-Article-Final-Document-v2.pdf#page=67> [Accessed 15 December 2021] Professor Babcock served as general counsel to the National Audubon Society from 1987-91 and as deputy general counsel and Director of Audubon’s Public Lands and Water Program from 1981-87. Previously, she was a partner with Blum, Nash & Railsback, where she focused on energy and environmental issues, and an associate at LeBoeuf, Lamb, Leiby & MacRae where she represented utilities in the nuclear licensing process. From 1977-79, she served as a Deputy Assistant Secretary of Energy and Minerals in the U.S. Department of the Interior. Professor Babcock has taught environmental and natural resources law as a visiting professor at Pace University Law School and as an adjunct at the University of Pennsylvania, Yale, Catholic University, and Antioch law schools. Professor Babcock was a member of the Standing Committee on Environmental Law of the American Bar Association, and served on the Clinton-Gore Transition Team.)-rahulpenu

INTRODUCTION Space exploration is heating up. Governments and private interests are on a fast track to develop technologies to send people and equipment to celestial bodies, like the moon and asteroids, to extract their untapped resources.1 Near-space is rapidly filling up with public and private satellites, causing electromagnetic interference problems and dangerous space debris from collisions and earlier launches.2 The absence of a global management system for the private commercial development of outer space resources will allow these near space problems to be exported further into the galaxy.3 Moreover, without a governing authority or rules controlling entry or limiting despoliation, outer space could turn into the “Wild West” of the twenty-first century.4 Space treaties executed in the last century espoused the principle that space should be developed for the benefit of all mankind and banned both private ownership and militarization of space resources.5 But, they left development of a system for managing non-military activities in outer space to another day.6 Private commercial interests, which would be absorbing the risks and paying the high costs of space development, oppose any management scenario premised on that principle, as it would enable less developed countries to free ride on their investments.7 These interests, unsurprisingly, support privatizing outer space.8 But acceding to their wishes by establishing a system of property-based rules would transport Earth’s current division between haves and have-nots into outer space, and could lead to destabilizing hostilities—the exact consequences that the early treaty drafters hoped to avoid.9 To date, most scholars in this area have focused on developing management systems premised on private ownership or possession of the surface of some celestial body.10 This Article explores an alternative concept, the commons, in which no individual owns the property in question or can exclude others from it. Viewing property as a commons is closer to the principles set out in the various space treaties than implementation of a private property regime, and also offers a workable property regime. This Article demonstrates these conclusions by showing similarities between a large, Earth-bound commons, like the ocean and outer space, and how various commons management scenarios allow equitable use of resources, while preventing their despoliation and devolution into hostile disputes over entitlements to them. However, each of these commons management scenarios is flawed in some way and runs a similar risk to management approaches for private property of allowing the resource to be over-used or inequitably distributed. The public trust doctrine (**PTD**), an ancient doctrine that governments and individuals have used effectively for centuries to protect the public’s interests in terrestrial common pool resources (CPR) **and** to **fill** regulatory **gaps**, can be helpful in both respects.11 An examination of the doctrine identifies **commonalities** **between** outer **space** **and** **terrestrial** public trust **resources**.12 The **ease** and **low** **cost** of its implementation and enforcement, as well as its infinite malleability, are additional reasons to select it as a stopgap measure with some modification.13 This Article’s structure is straight forward. Part I acquaints the reader with the problem. It explains why the need to develop a management regime for space is becoming increasingly critical as advancing technology is allowing more and more private commercial interests to play at the edge of outer space with attendant negative externalities. 14 Soon these technological advances will allow private commercial interests to invade outer space with the potential for similar adverse impacts.15 Part II examines the international legal framework governing those activities and finds it lacks any capacity to regulate activities in outer space, in part because it is riddled with ambiguities and contradictions when it comes to ownership of outer space and its resources. Part III turns to that problem by discussing two types of property: private property and property owned in common with others. It examines the key features of each as well as their positive and negative attributes, how each might function in outer space, and what the consequences might be if one or the other prevailed. Because any property arrangement that results in its appropriation by the owner and the exclusion of others violates international space law, Part III also identifies various less-thanfull fee property arrangement, like leases and easements, to see if these problems can be avoided and concludes they cannot.16 It then examines property held in common to determine its viability under international space law and finds it consistent. Part IV investigates various approaches to managing property in outer space, be it held in private ownership or in common. Different approaches for managing private property in space are explored, including the right of first possession, tradable property claims, and establishing an exclusive economic zone, as well for managing an open access commons, such as the application of stewardship principles, norms, and the PTD. Each approach is evaluated in terms of its consistency with international law; its ability to promote and protect a sustainable, equitable, non-monopolistic, non-hostile environment in outer space; its efficiency; and its cost effectiveness. Only the PTD, which has been used for centuries to protect the public’s interests in CPRs and has demonstrated its ability to adapt to new circumstances, may be able to meet these goals.17 This Article finds commonalities between outer space and Earth-bound public trust resources, like the oceans. Additionally, the doctrine’s open access purpose resonates with language found in international treaties governing activities in outer space.18 This Article concludes that using the PTD will lead to a durable, equitable management regime in a commons where the wealthy are neither able to accumulate and control the resources that outer space has to offer nor over-exploit and deplete them. However, neither the doctrine nor ownership in common supplies any incentives for development, which may lead private enterprises to question whether development of outer space resources is worth the risks and costs.19 But, limited use of private property management approaches, like lotteries and tradable development claims—a form of overlapping hybridity between one type of property, a commons, and a management regime from another, private property—may fill this gap.20 This Article’s contribution to the literature on managing outer space resources and commons theory is using the PTD to bridge the gap between them and to suggest a hybrid management approach that melds commons theory with private property incentives.

#### Exemptions devastate Regulation Credibility – OST proves.

Hickman and Dolman 2 John Hickman and Everett Dolman Volume 21 Number 1 2002 “Resurrecting the Space Age: A State–Centered Commentary on the Outer Space Regime” (associate professor in the Department of Government and International Studies at Berry College in Mt. Berry)//Elmer

Thus a state party need merely announce its intention to withdraw and then wait one year. Withdrawal of a single state party to the treaty, however, would not necessarily terminate the treaty between the other state parties. Yet, the decision of an important state not to be bound by a regime–creating treaty obviously endangers the entire treaty. The decision of the United States or China to withdraw from the OST would have far greater implications for the survival of the international space regime than the same decision by Bangladesh, Burkina Faso, or Papua New Guinea—the equality of states under international law remains nothing more than a useful fiction. For the OST to remain good international law, it must be accepted as such by the major space faring states of the 21st Century: the United States, Russia, the European Union, Japan, and China. One defection from the regime by a member of this group would no doubt lead to its effective collapse, as the remaining space faring states are unlikely to use the kind of coercion necessary to enforce the regime. A more likely response to such a defection is a scramble to make similar claims to sovereignty, based on historical precedent and effective occupation. Similar rushes to stake claims for territory sovereignty in other celestial bodies might follow.

### 1AC---Sustainability

#### The Advantage is Sustainable Space Development:

#### Implementing the PTD for Private Appropriation results in a legally binding regime that curbs unsustainable development – ensures closing of legal loopholes.

Babcock 19 (, H., 2019. THE PUBLIC TRUST DOCTRINE, OUTER SPACE, AND THE GLOBAL COMMONS: TIME TO CALL HOME ET. [online] Lawreview.syr.edu. Available at: <https://lawreview.syr.edu/wp-content/uploads/2019/09/H-Babcock-Article-Final-Document-v2.pdf#page=67> [Accessed 15 December 2021] Professor Babcock served as general counsel to the National Audubon Society from 1987-91 and as deputy general counsel and Director of Audubon’s Public Lands and Water Program from 1981-87. Previously, she was a partner with Blum, Nash & Railsback, where she focused on energy and environmental issues, and an associate at LeBoeuf, Lamb, Leiby & MacRae where she represented utilities in the nuclear licensing process. From 1977-79, she served as a Deputy Assistant Secretary of Energy and Minerals in the U.S. Department of the Interior. Professor Babcock has taught environmental and natural resources law as a visiting professor at Pace University Law School and as an adjunct at the University of Pennsylvania, Yale, Catholic University, and Antioch law schools. Professor Babcock was a member of the Standing Committee on Environmental Law of the American Bar Association, and served on the Clinton-Gore Transition Team.)-rahulpenu

F. The Public Trust Doctrine (PTD) as a Gap Filling, Place-Holding Management Approach506 The PTD offers both an approach for managing an open access commons and a gap-filling tool until a regulatory regime is adopted.507 The doctrine is based on the idea that the “sovereign holds certain common properties in trust in perpetuity for the free and unimpeded use of the general public.”508 The public’s right to access and use trust resources is never lost, and neither the government nor private individuals can alienate or otherwise adversely affect those resources unless for a comparable public purpose.509 The resources the doctrine protects “have long been part of a ‘taxonomy of property’ [that recognizes] the division of natural wealth into private and public property.”510 “The doctrine places on governments ‘an affirmative, ongoing duty to safeguard the long-term preservation of those resources for the benefit of the general public,’”511 thus limiting the sovereign’s power on behalf of both present and future individuals.512 It directs the government to manage trust resources for public benefit, not private gain.513 It applies to private as well as public resources and is used to preserve the public’s access to CPRs.514 Government agencies have the non-rescindable power to revoke uses of trust resources that are inconsistent with the doctrine.515 This effectively places a permanent easement over trust resources that burdens their ownership with an overriding public interest in the preservation of those resources.516 However, trust resources can be alienated in favor of private ownership, if the alienation will still serve the public’s interest in those resources and not interfere with trust uses of the remaining land.517 The PTD, therefore, protects the “people’s common heritage,”518 just as Article 11 of the Moon Treaty protects outer space as part of the common heritage of mankind.519 The doctrine also appears to be infinitely malleable. Original uses of the doctrine were restricted to only that “aspect of the public domain below the low-water mark on the margin of the sea and the great lakes, the waters over those lands, and the waters within rivers and streams of any consequence,”520 and covered only traditional uses of those lands, like fishing and navigation.521 Over time, the scope and application of the doctrine broadened to protect more public resources and different uses.522 Thus, the **doctrine** expanded to protect new trust resources, such as dry sand beaches, inland lakes, groundwater, dry riverbeds, and wildlife,523 and passive uses of those resources, like scientific study.524 The original link to navigable water and tidelands disappeared.525 Supporters of the doctrine successfully advocated that it be applied to “wildlife, parks, cemeteries, and even works of fine art,”526 while arguing more recently its application to the atmosphere.527 A doctrine that imposes a perpetual duty on the sovereign to preserve trust resources, prevents their alienation for private benefit, assures public access to them, and can be invoked by anyone seems particularly useful as a management tool in outer space.528 The fact that **public** **access** to trust resources is so **central** to the doctrine **makes** it **reflective**, not contradictory, **of** international space **law’s** **bar** **against** **appropriation** of outer space and of the principle of space being the “province of all mankind.”529 It **avoids** the problems of alienation and **exclusion** associated with any of the management approaches associated with some form of private property and requires neither the creation of a new administrative authority nor the presence of a close-knit group of like-minded people.530 Members of the public, both rich and poor, can invoke and enforce the doctrine as easily as the sovereign.531 It is cost effective to the extent that no separate apparatus is required to implement it, and the doctrine has shown itself to be highly adaptable and innovative as different needs arise.532 It could also fill the gap in international law with respect to managing celestial property. Therefore, of all the management approaches studied here, the PTD seems the most suited to keep order in space until a regulatory regime is imposed. However, the doctrine provides no incentives for development of trust resources; rather, it might be used to limit or curtail that development, making it an imperfect, perhaps even counter-productive solution by itself to the extent that such development might be beneficial.533 Modifying the doctrine to allow limited use of private property management approaches, like tradable development claims, might buffer that effect—a form of overlapping hybridity between one type of property, a commons, and a management regime from another, private property, enabled by application of the PTD. CONCLUSION “Only a legal system that accommodates both the human need for resources and the necessary preservation of mankind’s common heritage can fulfill these criteria.”534 The future is now with regard to the development of outer space and its resources—it is no longer a question of whether humans will engage in these activities, but how soon they will. Technically advanced countries and private commercial enterprises are probing outer space and preparing for landing on an asteroid or the moon to extract their resources.535 Speculators are selling deeds to the moon’s surface and preparing to exploit the tourism potential that space offers.536 But, the legal framework for managing these initiatives is almost nonexistent.537 International treaties came into being before all this activity began in earnest and national laws that might apply are stunted by jurisdictional quandaries like the absence of national boundaries in outer space.538 Thus, there is an urgency to figure out how to control what happens in outer space before its resources are irreparably damaged or permanently monopolized by powerful countries and individuals. In the absence of regulation, much of the current debate centers on what property regime should be applied in outer space.539 The assumption is that by only allowing private property rights in space, countries and commercial enterprises will undertake the risks and costs of space development.540 However, unless international space law changes, it may prevent this from happening. If it changes, strong management controls will be necessary to prevent destruction or over-consumption of celestial resources, as well as monopolization and competitive behavior by participants, which could lead to hostilities and inequities. This Article examines various private property regimes, including those of less than full fee ownership, to see if any would avoid the conflict with the international prohibition on appropriation of outer space and its resources. It concludes that none will because each retains the right to exclude and each is insensitive to the treaties’ equity concerns. In contrast, considering outer space to be common is consistent with international space law in both respects. Hypothesizing that private property in outer space may yet prevail, this Article investigates different private property management approaches, such as the right of first possession, lotteries, and tradable development rights, to see if any would be cost effective, easy to implement and equitable, and would also prevent over-consumption, monopolization or the slide into rivalrous behavior. The Article concludes that each comes up short in some respect. Social norms as a management tool for property held in common, although compliant with international law, are also not up to the task. Instead, although ancient, the PTD, with its malleability, easy and cost-effective implementation and enforcement, non-consumption principle, and consistency with the goals that animate international space treaties, seems best suited to the task of protecting the public’s interests in the global commons that is outer space as it has done for centuries in Earth-bound commons. But, as its principal terrestrial use has been to protect trust resources from development, the doctrine needs some modification to encourage development of celestial resources. Hence, this Article suggests that modifying the PTD to allow the application of private property management tools, like tradable development rights, will not only allow development, but also will assure that when it happens, it will not be just profitable for a few, but will also be sustainable and equitable.

#### Sustainable development embedded in law solves security, debris, traffic and SSA.

Aganaba-Jeanty 16 (, T., 2016. Space Sustainability and the Freedom of Outer Space. [online] Taylor & Francis. Available at: <https://www.tandfonline.com/doi/full/10.1080/14777622.2016.1148463> [Accessed 15 December 2021] Timiebi is an assistant professor of Space and Society, in the School for the Future of Innovation in Society, an affiliate faculty with the Interplanetary Initiative, a senior global futures scientist with the Global Futures Lab, and holds a courtesy appointment at the Sandra Day O’Connor College of Law, all at Arizona State University. Timiebi was a post-doctoral fellow and is a senior fellow at the Centre for International Governance Innovation (CIGI) based in Waterloo, Ontario Canada where she focused on environmental and space governance. Timiebi was Executive Director of the World Space Week Association coordinating the global response to the UN 1999 declaration that World Space Week should be celebrated Oct 4-10 annually. She is currently on the Advisory Board for the Space Generation Advisory Council supporting the UN Programme on Space Applications. She is also on the Science Advisory Board of World View Enterprises and the SETI Institute. - pp. 10-13.)-rahulpenu

---Critique of status quo polices for space sustainability

---New regimes key

---Sustainability needs to be in law

---Perm VS Global South Ks

Definitions of space sustainability The Secure World Foundation defines space sustainability as “ensuring that all humanity can continue to use outer space for peaceful purposes and socioeconomic benefit.”39 It is also described as “the ability of all humanity to continue to use outer space for peaceful purposes and socioeconomic benefit over the long term.” It is proposed that, read together, these broad definitions take as their premise that: (1) all humanity thus far is using space for peaceful purposes and for socioeconomic benefit; (2) this use is threatened; (3) measures must be taken to protect it; and (4) all humanity currently possesses the ability, in the sense of having a skill or the capacity, to ensure space sustainability for peaceful purposes. Under this conceptualization, the negative effect of not using space sustainably is primarily economic.40 Bearing in mind the governmental origins of space exploitation, where market economics did not play a primary role in decision making, the growing focus on the economic perspective in space affairs acknowledges Carolyn Deere’s opinion that problems emerge in the international domain from an absence of powerful economic interests.41 Of course, as more space applications are developed, economic interests become more prevalent in that market protectionism then underlies the rationales for many positions taken. Space sustainability is also conceptualized as defining good behavior, its boundaries, and disincentives for negative behavior in space.42 Space sustainability then becomes a much more limited political concept calling for specific measures to strengthen norms.43 Some notable examples follow: An International Code of Conduct—the European Union proposed a non-binding voluntary code whose purpose is “security, safety, sustainability” for all space activities providing for general measures on space operations and space debris.44 The Scientific and Technical Subcommittee of UNCOPUOS working group objective of establishing guidelines for the long-term sustainability of outer space activities. Proposed International Civil Aviation Organization for Space—the establishment of an international organization focused on space safety and the establishment of binding safety standards similar to the International Civil Aviation Organization.45 Industry efforts for a global space situational awareness database Group of Governmental Experts (GGE) on Transparency and Confidence Building Measures. Depending on the forum for discussion and in line with the previously mentioned initiatives, the concept of space sustainability is also used interchangeably with the following: (1) space security, which entails access to space and freedom from threats;46 (2) space stability addressing space situational awareness;47 (3) space safety, which is protection from all unreasonable levels of risk (primarily protection of humans or human activities);48 and (4) responsible uses of space.49 These all reflect the two components of space sustainability as described by the founder of Secure World Foundation: “the first is the physical environment, which includes management of space debris, electromagnetic and physical crowding and congestion, and space weather.... The second component is the political environment, and includes promoting stability and preventing conflict between nations.”50 Bearing this in mind and notwithstanding the potential confusion caused by the interchangeability of terms used, at the core of all proposals conceptualizing space sustainability or related concepts are the notions that: (1) space assets are kept safe and secure, and that the assets are not harmed or interfered with; (2) peaceful space activities continue as free from purposeful/intentional or unintentional harmful interference; (3) the space environment is preserved for peaceful uses; and (4) international cooperative efforts are required. These four points are understood to be the current core conditions for and of space sustainability. It must be acknowledged that space sustainability, in this context, is severed from the ecological roots of sustainable development. Rationale for space sustainability The proposed baseline conditions for the current conception for space sustainability coincide with Gallagher’s analysis of the logic for space cooperation as “Space Governance for Global Security” where all space actors seek “to secure the space domain for peaceful use; to protect space assets from all hazards; and to derive maximum value from space for security, economic, civil, and environmental ends.”51 Based on this understanding, the current conception of and rationale for space sustainability ties more clearly to global security than to sustainable development. This logic emphasizes that “the more different countries, companies, and individuals depend on space for a growing array of purposes, the more they need equitable rules, shared decision-making procedures, and effective compliance mechanisms to maximize the benefits that they all can gain from space, while minimizing risks from irresponsible space behaviors or deliberate interference with legitimate space activities.”52 While it is acknowledged that such a need exists, the difficulty in reaching agreement on how to bring it about is one reason why some states are more focused on producing a dialogue on long-term sustainability. This is seen in the proliferation of reports outlining best practices and options that enhance sustainability through increased information sharing, as well as a focus on technical issues rather than on the creation of any new legal regimes. To minimize some of the risks of non-sustainable space use, Weeden53 proposes a three-pillar technical approach to space sustainability: (1) debris mitigation; (2) debris removal; and (3) space traffic management. This is conjoined with an immediate need for data in support of conjunction assessment and collision avoidance. This emphasis on data sharing/collection includes enabling research into potential solutions to the problem of space debris, and enhancing transparency and cooperation among states. Weeden also suggests that this narrow approach to space sustainability serves both to educate space actors about the severity of the space debris problem and to provide stability to reduce the likelihood of conflict. A common approach to data also serves as verification for a potential code of conduct in space, setting the stage for future space governance models. These proposals follow the logic of sustainability for global security. While this logic is in line with the dominant conceptualization of benefit sharing and freedom of outer space, the position taken in this article is that it does not adequately speak to sustainability from the perspective of aspirant space states. To do so requires a significantly broader discussion and solutions aimed towards aligning space law and policy with the sustainable development paradigm, if understood as being an inclusive paradigm and not focused on the individualistic/self-interested nature of the current conception of sustainable development. A systemic, sustainable development law approach calls for a conscious engagement with the web of overlapping social, environmental, cultural, and legal frameworks, as well as cultural considerations, economic policies, expectations, players, and interests.54 Bearing in mind current U.S. space policy,55 such a broad overarching objective may not be achievable as part of the dialogue on the “Long Term Sustainability of Outer Space Activities,” but U.S. policy regarding preservation of the space environment nevertheless offers insights because international initiatives congruent with it are likely to garner the most support. Schrogl56 proposed that sustainability is rendered to threats and risks to satellite operations. This approach acknowledges the intersection of multiple issue areas: environment, security, mobility, knowledge, resources, and energy. This intersection of issue areas is more akin to the wider discourse of sustainability development of and on the Earth, and prompts a discussion of value to emerging and aspirant space actors. Otherwise, the dominant conceptualization of space sustainability removes any focus upon providing for the needs of those not among the most advanced space nations. This problem is highlighted in Peter and Rathgeber’s definition of space sustainability: Sustainable space activities can be seen as activities (in space, from space, through space and towards space) that meet the needs of the present space actors without comprising the ability of future generations to meet their own needs of performing space related operations safely.57 Peter and Rathgeber claim that the emergence of new institutional space actors, particularly from the south, is putting a greater pressure on the space environment and that the participation of the south in space sustainability efforts is unsatisfactory.58 Yet, the role of less-advanced nations in sustainability initiatives is more so on the receiving end in that advanced nations seek to engage newcomers to space during the early phase of the development of future directives and codes of conduct for sustainable space activities; that is,not really to seek their input, but to ensure compliance by the less-advanced nations.59 Their space activities are judged as either threats to or consistent with space sustainability, rather than as part of articulating the content of space sustainability.60 This indicates that, for national space programs of established space nations, a truly international focus on space sustainability is not a priority**.** It is interesting to note, at this juncture in the discussion, a fundamental provision proposed by a group of developing states during the development of the U.N. Space Benefits Declaration.61 (1) All States should pursue their activities in Outer Space with due regard to the need to preserve Outer Space, in such a way as not to hinder its continued utilization and exploration. (2) States should pay attention to all aspects related to the protection and preservation of the Outer Space environment, especially those potentially affecting the Earth’s environment. (3) States with relevant space capabilities and with programs for the utilization and exploration of outer space should share with developing countries on an equitable basis the scientific and technological knowledge necessary for the proper development of programs oriented to the more rational utilization and exploration of Outer Space.62 Paragraph 3 is fundamental and truly revealing when read in the light of the analysis of Schrogl.63 Schrogl claims that the declaration takes up the problem of space debris, which might endanger future space utilization to a significant extent. However, he also states that “the wish [of the Developing countries] to be informed about debris prevention measures voiced. . . is reasonable but actually needs no mentioning since these technological developments are discussions and documented publicly to the greatest extent.”64

#### Congestion creates rivalrous orbits.

Fabian 19 (Christopher; January 2019; B.S. from the United States Air Force Academy, thesis submitted in partial fulfillment of the requirements for a M.S. from the University of North Dakota, approved by the Faculty Advisory Committee and in coordination with Dr. Michael Dodge, David Kugler, and Brian Urlacher; University of North Dakota Scholarly Commons, “A Neoclassical Realist’s Analysis Of Sino-U.S. Space Policy,” <https://commons.und.edu/theses/2455/>)

b. Defect/Defect The ubiquity of space technology has also yielded the negative externality of overcrowding the space domain. Despite its seemingly unlimited size, there are a limited number of useful earth-centric orbits to optimize terrestrial coverage. It is projected that there are over 300,000 medium sized objects capable of causing catastrophic failure of a satellite upon collision currently in earth’s orbit.159 Of these objects, 20,000 are actively tracked by the comparatively robust space surveillance network (SSN) of the United States Air Force, only 1,000 are active payloads, and even fewer have maneuver capability.160 Recent trends indicate that the problem of orbital congestion will only worsen in the coming decades as the barriers to entry are reduced. Launch service cost is rapidly decreasing due to an increased number of service providers and technology revolutions such as reusable rockets. Also, the miniaturization and simplification of satellite payloads further reduces the cost and infrastructure needed to be a spacefairing nation.161 This is evidenced by the near doubling of state operated satellites from 27 in 2000 to over 50 in 2012, coupled with a near doubling in total space objects from 1997 to 2007.162 The accumulation of space debris is a vital concern to the sustainable development of the space environment due to the increased probability of conjunction between active payloads and all other objects that results from crowded orbits. This increase in collision probability occurs proportionally to the number of objects in a given orbital domain. The tripling of orbital debris projected to occur in the next century, due to routine use and accumulation alone, would cause a tenfold increase in the probability of collision. In the event of a catastrophic collision between two objects, the resulting debris cloud could cause a cascading effect. Each successive collision increases the probability of another occurrence in a given orbit until an instability threshold is reached. At this threshold, debris removal due to decay would be negligible compared to debris created by subsequent collisions. As the propagation of debris continues, the cost of launching a satellite would eventually outweigh the benefits received due to the probability of that asset being destroyed by errant debris, effectively rendering the given orbit unusable. This debris propagation model and the dangers associated with it are colloquially referred to as the Kessler Syndrome. Kessler asserts unstable regions of low earth orbit (LEO) currently exist and that, barring the addition of more debris, a major collision would occur once every 10-20 years. If debris doubles, as it has in the last decade, the collision rate would increase to 2.5 years. Although most models’ time scales are on the order of centuries, it is widely accepted that the current rate of debris accumulation will render critical orbits unusable unless immediate measures are taken to return stability.163 There is near universal acceptance of the danger space debris presents, yet little substantive action has been taken to solve the problem. Current debris accumulation and propagation models show that earth orbiting domains are finite resources. Continued unsustainable development moving forward may preclude future usage, making earth orbits rivalrous goods.164 Furthermore, orbital domains are made a non-excludable good by the OST which states, “Outer space… shall be free for exploration and use by all States without discrimination of any kind.”165 As a non-excludable public good, space succumbs to the tragedy of the commons where the privately beneficial strategy of space utilization differs significantly from the socially optimal strategy promoting orbital stability.166 Understandably, most analysis has focused on solving the problem of orbital instability by addressing the market failure responsible for debris creation. The current reasoning suggests that if actors creating space debris internalize the cost of their actions, a solution can arise. Proposed solutions run the gamut of ideologies from free market tax incentives, to command and control legislation, to restructuring orbital property rights. Scientific solutions have also been proposed, but technological feasibility and cost remain major problems. Furthermore, analogous environments susceptible to the tragedy of the commons have been examined in hopes that they may prove applicable to the problem of orbit instability.167 This analysis is ultimately useful if the problem is to be solved under nominal conditions, but there is an underlying problem that needs to be addressed before any of these proposed solutions can realistically be enacted.

#### That triggers missile radars.

Hoots 15 (Felix; Fall 2015; Distinguished Engineer in the System Analysis and Simulation Subdivision, Ph.D. in Mathematics from Auburn University, M.S. in Mathematics from Tennessee Tech University; Crosslink, “Keeping Track: Space Surveillance for Operational Support,” <https://aerospace.org/sites/default/files/2019-04/Crosslink%20Fall%202015%20V16N1%20.pdf>)

The launch of Sputnik on October 4, 1957, marked the beginning of the Space Age. It also marked the beginning of an intense space race that brought a remarkable rate of rocket launches. In a very short time, the number of objects in orbit grew dramatically. This created a host of strategic challenges, including the need for space surveillance. In particular, the Air Force needed a way to prevent false alarms as satellites came within view of missile-warning radars, while the Navy needed a way to alert deployed units of possible reconnaissance by satellites overhead. These needs led to the establishment of a military mission to maintain a catalog of all Earth-orbiting objects—active payloads, rocket bodies, and debris—along with detailed information about trajectory and point of origin. Such a catalog could be used to filter normal orbital passages from potential incoming missiles and predict the passage of suspected spy satellites. The first catalog was relatively small in comparison with today’s version, which lists more than 22,000 items (as of May 2015). Also, the current version supports much more than the original military mission—and Aerospace is helping to extend its utility even further. The Space Catalog The Space Catalog is maintained by the Joint Space Operations Center (JSpOC) at Vandenberg Air Force Base, part of U.S. Strategic Command. One of the missions of JSpOC is to detect, track, and identify all artificial objects in Earth orbit. A key component of this mission is the Space Surveillance Network, a worldwide system of ground-based radars along with ground-based and orbital telescopes. The radars are used primarily for tracking near-Earth satellites with orbital period of 225 minutes or less, as well as some eccentric orbits that come down to near-Earth altitudes as they go towards their perigee. Ground-based telescopes are used for tracking more distant satellites, with orbital period greater than 225 minutes, and space-based sensors are used to track both near and distant satellites. The JSpOC tasks these sensors to track specific satellites and to record data such as time, azimuth, elevation, and range. This data is used to create orbital element sets or state vectors that represent the observed position of the satellite. The observed position can then be compared with the predicted position. The dynamic models used for predicting satellite motion are not perfect; factors such as atmospheric density variation caused by unmodeled solar activity can cause the predicted position to gradually stray from the true position. The observations are used to correct the predicted trajectory so the network can continue to track the satellite. This process of using observations to correct and refine an orbit in an ongoing feedback loop is called catalog maintenance, and it continues as long as the satellite remains in orbit. Ideally, the process is automatic, with manual inter vention only required when satellites maneuver or get near to reentry due to atmospheric drag. Sometimes, however, more effort is required. For example, a sensor may encounter a satellite trajectory that does not correspond well to anything in the catalog. Such observations are known as partially correlated observations if they are somewhat close to a known orbit or uncorrelated observations (or uncorrelated tracks) if they are far from any known orbit. Also, if a satellite is not tracked for five days, it is placed on an attention list for manual intervention. In that case, an analyst will attempt to match the wayward satellite to one of these partially correlated or uncorrelated tracks. If that effort succeeds, then the element sets are updated, and the object is returned to automatic catalog maintenance. On the other hand, if the satellite cannot be matched to a partially correlated or uncorrelated track, the satellite information continues to age. If it reaches 30 days without a match, the satellite is placed on the lost list. Risk Prediction One of the most visible uses of the catalog is to warn about collision risks for active payloads. This function predicts potential close approaches three to five days in advance to allow time to plan avoidance maneuvers, if necessary. Unplanned maneuvers may disturb normal operations and deplete resources for future maneuvers, so one would like to have high confidence in the collision-risk predictions. The reliability of the predictions depends directly on the accuracy of the orbit calculation, which in turn depends on the quality and quantity of the tracking data, which is limited by the capability of the Space Surveillance Network. Simply put, there are not enough tracking resources in the network to achieve high-quality orbits for every object in the catalog. Furthermore, many smaller objects can only be tracked by the most sensitive radars, and this tracking is infrequent. Most objects in the catalog are considered debris, which can neither maneuver nor broadcast telemetry. On the other hand, some satellite operators depend exclusively on the satellite catalog to know where their satellites are, and users of the satellite orbital data depend on the catalog to know when the satellites will be within view. This situation creates a challenging problem in balancing Space Surveillance Network resources to support the collision-warning task (tracking as many potential hazards as possible) while also providing highly accurate support to operational satellites (tracking the spacecraft as precisely as possible). The practical solution is to perform collision risk assessment using a large screening radius to ensure no close approaches are missed despite lower-quality predictions. Once an object is identified as having a potentially close approach, then the tasking level is raised, with the expectation that more tracking data will be obtained to refine the collision risk calculations. When the danger has passed, the object reverts to a normal tracking level. Collisions and spontaneous breakups do happen. The first satellite breakup occurred on June 29, 1961, when residual fuel in an Ablestar rocket body exploded, creating 296 trackable pieces of debris. Since that time, there have been more than 200 satellite breakups, the most notable being the missile intercept of the Fengyun-1C satellite, which created more than 3300 trackable fragments. In most cases, these breakups are first detected by the phased-array radars in the Space Surveillance Network. When multiple objects are observed where only one was expected, the downstream sensors are alerted, but no tasking is issued because specific debris orbits are not yet established. Tracks are taken and tagged as uncorrelated. Analysts at JSpOC then attempt to link uncorrelated tracks from different sensors to form a candidate orbit. Subsequent tracking improves the orbit to the point that the object can be named and numbered and moved into the catalog for automatic maintenance.

#### Nuclear war.

Rogoway 15 (Tyler; November 12; Defense Journalist and Editor of Time Inc’s The War Zone; Jalopnik, “These Are The Doomsday Satellites That Detected The Explosion Of Metrojet 9268,” <https://foxtrotalpha.jalopnik.com/these-are-the-doomsday-satellites-that-detected-the-exp-1737434876>)

For over 50 years the Pentagon has had early warning satellites in orbit aimed at spotting launches of ballistic missiles, especially the big intercontinental kind that can fly around the globe in less than 30 minutes and bring about nuclear Armageddon. Recently, these satellites have made news for their “secondary capabilities,” spotting the downing of Metrojet Flight 9268 and Malaysian Airlines Flight 17. These are the shadowy satellites that are capable of such amazing feats, and an idea of how they work. In 1960, at the height of the Cold War and at the dawn of the space age, the first Missile Defense Alarm System (MiDAS) satellite was launched into low earth orbit. Six years later there was a constellation of nine of these satellites roaming the heavens, each scanning the Soviet Union for large infrared plumes, the tell-tale sign of a ballistic missile or rocket launch. These fairly crude, low-earth orbit satellites, along with the radar-based Ballistic Missile Early Warning System, would be the basis for a Cold War ballistic missile surveillance system that would become ever more complex and capable as the years went by. If ballistic missile launches were detected and deemed a threat, the decision to retaliate would mean the National Command Authority making the call to do so within half an hour, an act that could bring an the end of humanity’s reign on Earth, permanently. The first really reliable and full coverage space-based ballistic missile early warning capability came with the launch of the first Defense Support Program (DSP) satellite in 1970. These new satellites were much more capable than their MiDAS predecessors. Early DSP satellite design was relatively straight forward, with the satellites’ spinning around their center axis while in geosynchronous orbit. This allows their telescopic infrared sensor to continuously sweep an area of the planet in a relatively brief amount of time, around six times in one minute. If something were detected, the information would immediately be data-linked to controllers on the ground at the 460th Space Wing located at Buckley AFB in in Colorado. A total of 23 of these satellites have been launched over the program’s life, with constant upgrades made along the way. A DSP satellite was launched by the Space Shuttle on STS-44 in 1991, and the last one was launched by a Delta IV Heavy in 2007. Most famously, the Defense Support Program constellation of satellites were used to detect launches of SCUD missiles during Operation Desert Storm.

#### Nuke war causes extinction AND outweighs other existential risks

* Checked

PND 16. internally citing Zbigniew Brzezinski, Council of Foreign Relations and former national security adviser to President Carter, Toon and Robock’s 2012 study on nuclear winter in the Bulletin of Atomic Scientists, Gareth Evans’ International Commission on Nuclear Non-proliferation and Disarmament Report, Congressional EMP studies, studies on nuclear winter by Seth Baum of the Global Catastrophic Risk Institute and Martin Hellman of Stanford University, and U.S. and Russian former Defense Secretaries and former heads of nuclear missile forces, brief submitted to the United Nations General Assembly, Open-Ended Working Group on nuclear risks. A/AC.286/NGO/13. 05-03-2016. <http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/OEWG/2016/Documents/NGO13.pdf> //Re-cut by Elmer

Consequences human survival 12. Even if the 'other' side does NOT launch in response the smoke from 'their' burning cities (incinerated by 'us') will still make 'our' country (and the rest of the world) uninhabitable, potentially inducing global famine lasting up to decades. Toon and Robock note in ‘Self Assured Destruction’, in the Bulletin of Atomic Scientists 68/5, 2012, that: 13. “A nuclear war between Russia and the United States, even after the arsenal reductions planned under New START, could produce a nuclear winter. Hence, an attack by either side could be suicidal, resulting in self assured destruction. Even a 'small' nuclear war between India and Pakistan, with each country detonating 50 Hiroshima-size atom bombs--only about 0.03 percent of the global nuclear arsenal's explosive power--as air bursts in urban areas, could produce so much smoke that temperatures would fall below those of the Little Ice Age of the fourteenth to nineteenth centuries, shortening the growing season around the world and threatening the global food supply. Furthermore, there would be massive ozone depletion, allowing more ultraviolet radiation to reach Earth's surface. Recent studies predict that agricultural production in parts of the United States and China would decline by about **20 percent** for four years, and by 10 percent for a decade.” 14. A conflagration involving USA/NATO forces and those of Russian federation would most likely cause the deaths of most/nearly all/all humans (and severely impact/extinguish other species) as well as destroying the delicate interwoven techno-structure on which latter-day 'civilization' has come to depend. Temperatures would drop to below those of the last ice-age for up to 30 years as a result of the lofting of up to 180 million tonnes of very black soot into the stratosphere where it would remain for decades. 15. Though human ingenuity and resilience shouldn't be underestimated, human survival itself is arguably problematic, to put it mildly, under a 2000+ warhead USA/Russian federation scenario. 16. The Joint Statement on Catastrophic Humanitarian Consequences signed October 2013 by 146 governments mentioned 'Human Survival' no less than 5 times. The most recent (December 2014) one gives it a highly prominent place. Gareth Evans’ ICNND (International Commission on Nuclear Non-proliferation and Disarmament) Report made it clear that it saw the threat posed by nuclear weapons use as one that at least threatens what we now call 'civilization' and that potentially threatens human survival with an immediacy that even climate change does not, though we can see the results of climate change here and now and of course the immediate post-nuclear results for Hiroshima and Nagasaki as well.

### Framework

**The standard is maximizing expected well-being. – we will spec – Hedonistic act Utilitarianism**

**Prefer:**

**1] Pleasure and pain are intrinsic value and disvalue**

**Blum et al. 18**

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

**2] These are important consequences—disregarding the destruction of the planet is antithetical to the purpose of radical resistance**

**Moten and Kelley, 17**—professor of Performance Studies at New York University AND Gary B. Nash Professor of American History at UCLA (Fred and Robin D.G., “Robin D.G. Kelley & Fred Moten In Conversation,” transcribed from <https://www.youtube.com/watch?v=fP-2F9MXjRE>, 31:49-55:57, dml)

MOTEN: Well, first of all, I just want to say how much I appreciate having a chance to be here with all of you tonight, and thank you, Rinaldo, and, uh, Alicia, and Afua, of course. Robin, as always, uh, an honor to be, have a chance to hang out with you, and uh, and to learn from you, and um, let me see. Um, well, I tend to think of Black studies not so much as an academic discipline or confluence of disciplines but as the atmosphere in which I grew up, and so, and I love that, that atmosphere. I love the way that it felt, and I love the way that it smelled, and I love the flavors, and I love the sounds, and I love the movements. Um, and so, it is, again, something that I think has a **certain place**, maybe, **in the university**, and what it meant, what it has meant for Black studies to take that place in the university has had both, has been both good and bad. I think it’s probably done much more for the university than it has for Black studies, and, and that’s something worth thinking about. And I **don’t say that because I’m trying to advocate some withdrawal from the university of Black studies**, but I’m thinking that, you know, that at this stage of the game in having done the work of attempting to actually **bring**, um, **the university into** some sense of its own, of what ought to be **its own intellectual mission**, Black studies has the right to **look out for itself now**, for a little bit, um, and I think it’s worth it to do that. And insofar as Black studies has earned a right to look out for itself, what that really means, I think, is that Black studies has earned the right to try again to take its **fundamental responsibility**, which is to be, uh, a place where we can **look out for the Earth**. Um, I think that Black studies has a **fundamental** and **specific**, though **not necessarily exclusive mission**, and that mission is to **try to save the Earth**, or at least to try to save, not, well, on the **most fundamental level** to **save the Earth**, and on a secondary level, to try to **save the possibility of human existence**

**on the Earth**. Um, and I know that’s a big statement, and I don’t wanna take up all the time, but I’m happy to try to say more about what I think I mean by that later on, but, um, but I think maybe it’s important just to leave that big statement out there for a minute, and just to make sure that you know that I knew that I said it when I said it.

KELLEY: Okay, well, actually I wanna echo, uh, Fred’s sentiments, that it’s really an honor to be here, in this space. Um, this is the second time that we’ve had kind of a public conversation, and it’s always packed, you know, and it’s always a lot of people, and expectations are always high, and one of my favorite things on the planet, besides just talking to my daughters, talking to Fred Moten, um, you know, and it’s just really, you know, I learn so much from it, and in fact, let me just begin by saying that one of the pieces that Rinaldo was referring to was an essay I wrote called, uh, “Black Study, Black Struggle,” which was entirely inspired by, uh, Fred Moten and Stefano Harney’s, uh, book, “The Undercommons.” It was a way of the application of the notion of the undercommons to understanding what was happening at that moment, which in, in the fall of 2015, there was like an explosion of, um, Black protests on, on campus, and, you know, I won’t repeat what’s in the article, uh, but it, it’s not an accident that some of those struggles, uh, were products of what was happening in the streets. In other words, what happened in Ferguson, and what happened in Baltimore, what happened all over the country, and what happened in places like here in Toronto, were the catalyst for, um, a kind of explosion on campuses, where, uh, students were trying to figure out their place in the university. They’re dealing with racism, and microaggressions on university campuses, uh, they’re dealing with a, a kind of deracinated, you know, curriculum where ethnic studies wasn’t what it was, in its inception. Um, and, I was also dealing with, or many of us were also dealing with, uh, a culture of, and I hate to put it this way, but a **culture of anti-intellectualism** in, in a different sort of way. I mean, universities are often anti-intellectual, in that they actually **disavow certain forms of knowledge** and put other knowledge above that, which is an anti-intellectual position by the way. Um, but then when you’re assaulted by that all the time, uh, sometimes you end up **mirroring that culture**. And you’re saying “well I’m not gonna read this, I’m not gonna read that, because so-and-so wrote it,” as opposed to saying that there’s **nothing off the table**, uh, that Black studies, and Fred knows this ‘cause he repeats it more than I do, that our mutual, uh, teacher, Cedric Robinson, who paraphrased C. L. R. James, said you know, Black studies is a **critique of Western civilization**, and if that is the case, then we **both** have to **dismantle it**, **recognize the weak edifice** upon which it’s built, but also **know everything that’s happening within it**. But anyway, let me just back up, um, so, I just, so the three points I wanna make in reference to the question, one is that, uh, social movements have always been the catalyst for Black studies. When Fred was talking about, you know, Black studies as, as, uh, kinda, kinda like a way of life, as an atmosphere in which he grew up and which I grew up and many of us grew up, that’s so true. I never thought about it that way, but, you know, that’s so true. And in fact, um, if anything, Black Studies is not a multidiscipline but a project, a project for liberation, whatever that means, and liberation is an **ongoing project**. Um, Ruthie Gilmore, uh, who was at USC, uh, with me and Fred, had come up with this idea of renaming ethnic studies “liberation studies.” And, you know, we were actually serious about that, we were like, trying to figure out how to do that, and never filled it, but it reminds us that, you know, it’s not about, um, it’s **not about a body**. It’s **not about bodies**. It’s about **ideas**, and about the **future**, you know. It’s about **recognizing the past** and the **construction of a new future**. And so I think, in that respect, in order to understand the future of Black studies, we gotta understand the movements that produced it—that, that the Movement for Black Lives, that, um, uh, We Charge Genocide, that Black Youth Projects 100—all these struggles that erupted have, in fact, uh, pointed the way for Black Studies. The problem is, is that what gets constituted as the institutional space of Black studies, in many cases, isn’t really that. And I hate to bring people down, because we’re supposed to be up, right? But there are a lot of departments that I wouldn't call Black studies departments that have that name, you know, there are a lot of, there's a lot of scholarship that goes on that has **no relationship at all** to the **project of transformation**, or to **people**, to **actual people in community**. And one of the important things to always remember is that, um, we wouldn't have Black studies if it wasn't—in the United States, that is, I'm talking about the US—if it wasn't for Watts, if it wasn't for Detroit in 67, and if it wasn't for those kinds of urban rebellions, if it wasn't for the struggles in the South, that's where Black studies comes from. Uh, and so it moves into the university as a, as a **transformative project**. Um, it's not—and that's why I think there was a **disconnect** between some of the, the protests and what was happening in the academy. Finally, there’s this question of, of ethnic studies versus, or against, or for, or within or bedded in Black studies. And one of the things that, that I think a lot of us are trying to figure out is to deepen the relationship between indigenous studies and Black studies. Um, to understand that this was what I call second wave ethnic studies in the 1990s was itself a project that was, believe it or not, in a, a response to neoliberalism. And I think we don't always see that because we, we tend to read backwards in the 1990s and 1980s as, like, ethnic studies as identity politics in the narrowest sense of the word, that somehow this was about producing a sense of, of pride and a sense of identity devoid of the question of power. But if you actually look at the struggles for ethnic studies in the 80s and 90s, it was all about power. That, that what we think of as comparative or critical ethnic studies was, wasn't about the celebration of difference. It wasn't liberal multiculturalism. It was an assault on a neoliberal turn. And we, we sometimes forget that and, and, and then we write the history. And so I think I want to at some point talk more about that, but I think that's something to remember, because, right now, if we don't have Black studies as a **critique in response to the neoliberal neofascist turn**, then it's sort of **worthless**. You know, it's going to continue to exist. Maybe not in the academy though. So I'll just stop there.

WALCOTT: So, um, Robin, where you ended, and, and where Fred began, it’s a, is a good segue into getting you, both of you, to talk about the work that you've been doing around questions of Palestinian struggle and freedom. Fred, the work that, the tremendous work that you did in the ASA, um, American Studies Association, for which the Association is still living true, and, and Robin the work that you continue to do with um, um, with faculty for Palestine. But I'm thinking about Fred's provocation here that Black studies about saving the Earth and if Black studies is indeed about saving the Earth, which I'm very willing to fall right into right now, you know, first to kind of maybe think about this relationship between the struggle and, and freedom of Palestine and the relationship between ongoing settler colonialisms globally, because it seems to me that one of the most powerful things that, um, the kind of Black studies that has taken to the streets recently has done is to make those kinds of concerns present, right? BLM visits to Palestine, BLM in Toronto, always making sure that the invocation of the politics of settler colonialism is a part of a political organizing, and, um, their intimate relations with indigenous communities. So maybe this is a way for us to begin to talk about what's really at stake in this contemporary political moment where, um, or, or a radical politics, a politics that wants to think a different kind of future formation, is grappling with, um, settler colonialism in various kinds of ways. But Palestine being central to that, given that we know as we sit in this university is that often, um, what we call our senior administrators have an entirely different relationship with the question of freedom for Palestine.

MOTEN: Well, um, first, I mean, the work I did around, um, you know, the ASA’s, um, you know, decision to endorse the academic and cultural boycott of Israel was really minimal and minor compared to a lot of other people who were really out front, um, and, and have been working tirelessly for that for many, many years. Um, and I think, you know, the, my contribution was more, you know, rhetorical in many ways in, in, in, and, and maybe, maybe theoretical only in the most minimal sense, in the sense that what I wanted to do was a couple of things. First, to recognize that, um, you know, let's say that the conditions of what people call **modernity**, um, in, in, in, in, or global modernity, that the **fundamental conditions** that make that up are, you know, **settler colonialism**. And I think we can talk about settler colonialism in ways that are **broader** than the normal way that we usually think of them as a **set of violent** and **brutal relations** between Europe and the rest of the world. Because I think it's really important. And, and, and again, our, our mutual friend and mentor Cedric Robinson, pointed this out emphatically, and in brilliant ways early on, that settler colonialism is also an intra-European affair. Um, and it's important to understand that. It's important to understand this historic relationship between settler colonialism in the enclosure of the commons, um, which is part and, part of the origins of, of what we now know or understand as capitalism. But if we understand that **settler colonialism**, that the **transatlantic slave trade**, um, and that, you know, the emergence of a **set of philosophical formulations** that essentially provide for us **some modern conception of self** that has as its basis a kind of **possessive**, **heteronormative**, **patriarchal individuation**, right? That's **what it is to be yourself** on the **most fundamental level**. You know, and if you ask anybody in the philosophy department, they'll tell you that that's true, you know, and they won’t be joking, right, that, um, that, these, that these constitute the basis of, of our modernity. But for most of the people who live in the world, actually for **everybody who lives in the world**, although most of the people in live in the world are actually able to both recognize this and say this, that modernity is a **social** and **ecological disaster** that we live, that we now **attempt to survive**. Okay? And if we take that up, then part of what's at stake is that we recognize that **feminist** and **queer interventions against heteronormative patriarchy**, that **Black interventions against the theory** and **practice of slavery**, which is **ongoing**, that **indigenous interventions against settler colonialism** constitute the general both **practical** and **intellectual basis** for not only our **attempts to survive**, but also our attempts to, as I said before, **save the Earth**. And, and I put it in terms that the great poet Ed Roberson puts it; **not just to save the Earth**, but to **see the Earth before the end of the world**. And this is an **emergency** that we're in **now** and it's **urgent**. Um, and I believe that there’s a **specific convergence** of black thought and indigenous thought that situates itself **precisely in relation to**, and is **articulated through**, the **interventions of queer thought** and **feminist thought** that we want to take up. And, and it, and it strikes me as, for me at least, it's, it's a way of taking up a kind an—it's, it’s a way of imagining how one might be able to, how we might be able to **walk more lightly on the Earth**. To **honor the Earth** as we walk on it, as we stand on it. To **not stomp on it**, to **not stomp all over it**, where **every step you take is a claim of ownership**. And, and this is one way to put it, would be to not so presumptuously imagine that the Earth can be reduced to something so paltry and so viciously understood as what we usually call home. This is part of the reason why the queer and the feminist critique is so important. It's a critique of a general problematic notion of domesticity. It's like **another way of being on the Earth** that **doesn't allow you** in some **vicious** and **brutal way** to claim that it is yours, right? Um, this is important and this is so, you know, often the methods that we use to claim the Earth as ours involved fences, borders. This manifests itself on a private level from household to household, but it also manifests itself on a national level, and at the level of the nation state, and it's not an accident that settler colonial states take it upon themselves to imagine themselves to be the living embodiment of the legitimacy of the nation state as a political and social form. For me, there's two reasons to be in solidarity with the people of Palestine. One is because they're human beings and they're being treated with absolute brutality, but the other is that there's a specific resistance to Israel as a nation state. And for my money, to be perfectly clear about this, I believe that this nation state of Israel is itself an artifact of antisemitism. If we thought about Israel and Zionism, not just as a form of racism that results in the displacement of Palestinians, but if we also think about them as artifacts of the historic displacement of Jews from Europe, right, in the same way that we might think of, let's say Sierra Leone or Liberia as artifacts of racist displacement, okay. If we think about it that way, okay, and another, and the reason I'm saying this is just to make sure that you know that there's a possible argument against the formulation that criticism of Israel is anti-Semitic when we know that Donald Trump is a staunch supporter, that people like Pat Robertson in the United States are staunch supporters that help us to the fact that you can be deeply anti-Semitic and support the state of Israel. These things go together. They're not antithetical to one another. So that it becomes important for us to be able to suggest that resistance to the state of Israel is also resistance to the idea of the legitimacy of the nation state. It's not an accident that Israel has taken upon itself, that when Israel takes upon itself, when the defense of Israel manifests itself as a defense of its right to exist, this is important. It's a defense, not just of Israel's right to exist, but of the nation state as a political form’s right to exist. And nation states don't have rights. What they're supposed to be are mechanisms to protect the rights of the people who live in them, and that has almost never been the case, and to the extent that they do protect the rights of the people who live in them, it's in the expense, it's at the expense of the people who don't, okay. So part of what's at stake, one of the reasons why it's at, it's important to pay particular attention to this issue, why we ought to resist the ridiculous formulation that singling out Israel at this moment is itself anti-Semitic is because it's important to recognize that Israel is the state. [KELLEY: Right.] MOTEN: For reasons that I think are totally bound up with antisemitism, right? Israel is the state that, insofar as it makes the claim about its right to exist, is also making the claim about the nation state’s right to exist as such. It's this, it's that same kind of argument that, I remembered the—and I'm sorry to keep going on so long, but there's—there's those formulations that people often make about Black people in it or indigenous people as if they were the essence of the human, right, so that every time Black people or indigenous people do something that supposedly we're not supposed to do, it constitutes a violation to the very idea of the human. Right, because somehow as a function of the nobility of our suffering, we constitute the very idea of humanity, right? And there's nothing more brutal, right? Nothing more vicious than having been being consigned to that position. Similarly, Israel as a function of anti-Semitism has now been placed in the position of protecting the very idea of the nation state. So for me, first and foremost, it's important to have solidarity with the Palestinian people, but second of all, it's important to actually have some solidarity with the Jewish people insofar as they can and must be separated from the Israeli state because ultimately the fate of the Jewish people, if it is tied to this, to the nation state of Israel, will be more brutal than anything that has yet been done or can be imagined, and I mean everything that you think I mean when I say that.

**Extinction first –**

**1 – Forecloses future improvement – we can never improve society because our impact is irreversible**

**2 – Turns suffering – mass death causes suffering because people can’t get access to resources and basic necessities**

**3 – Moral obligation – allowing people to die is unethical and should be prevented because it creates ethics towards other people**

**4 – Objectivity – body count is the most objective way to calculate impacts because comparing suffering is unethical**

**5 – Moral uncertainty – if we’re unsure about which interpretation of the world is true – we ought to preserve the world to keep debating about it**

### Underview

#### Making impactful contributions demands causal policy relevance AND methodological pluralism---that is the only way to draw accurate contextual conclusions and prevent violent, imprecise reification.

Michael C. Desch 19. Packey J. Dee Professor of International Relations at Notre Dame and founding director of the Notre Dame International Security Center, former Professor and Director of the Patterson School of Diplomacy and International Commerce at the University of Kentucky, #gocats. 2019. “Conclusions, Responses to Objections, and Scholarly Recommendations.” Cult of the Irrelevant: The Waning Influence of Social Science on National Security, Princeton University Press.

I want to reiterate that I am not arguing that scholarship that is formal or quantitative is by definition irrelevant. Indeed, one can point to examples of both that are. When applied to economic issues, the discipline of economics has managed to be both highly “scientific” and, at times, quite relevant, though for both good and ill. Likewise, there are examples of highly quantitative political science that policymakers have found useful.1 Finally, there is much nonquantitative scholarship, particularly but not exclusively in the humanities that, is jargon laden and otherwise inaccessible to a wider audience, including government policymakers.2 This is by no means an anti-social science methods screed, just a reminder of the tensions between rigor and relevance that need to managed rather than assumed away. Nor is this in any way a brief against theory. Former State Department official Roger Hilsman reminded us that everyone, including policymakers, uses theory. Paraphrasing John Maynard Keynes, he concluded that “it seems obvious that all thinking involves notions of how and why things happen. Even the ‘practical’ man who despises theory has a number of assumptions and expectations which lead him to believe that when certain things are done, certain results follow.. . .It is this ‘theory’ that helps a problem solver select from the mass of facts surrounding him those which he hopes are relevant.”3 Given that, I fully associate myself with Hans Morgenthau’s balanced view that “theory without verification is metaphysics, but empiricism without theory is aimless.”4 Since policymakers implicitly use theory in analyzing situations and assessing their alternatives, such theories should be stated explicitly and analyzed systematically, which is a comparative advantage of the scholars. Instead, what I offer is simply a critique of the increasing tendency of many social scientists to embrace methods and models for their own sake rather than because they can help us answer substantively important questions. This inclination is in part the result of the otherwise normal and productive workings of science, but is also reinforced by less positive factors such as organizational self-interest and intellectual culture. As a result of the latter, many political scientists have committed themselves to particular social science methods not so much because they believe they will illuminate real-world policy problems but because they serve a vested interest in disciplinary autonomy and dovetail with a particular image (mathematized and model-based) of what a “science” of politics should look like. In other words, the professionalization of social science is the root of the enduring relevance question. This tendency to equate rigor with technique imposes costs on the rest of society as well as the discipline, especially when it excludes a more balanced approach to rigor and relevance of the sort that characterized the subfield of security studies in the past. On the former, as diplomat George Kennan rightly observed, policymakers need academic expertise

because they have to make decisions about issues and areas of the world “about which they cannot be expert and learned.”5 They depend on the academy for the raw data—whether quantitative or historical—that they use in decision making. They also rely on the social sciences for the theories they use to analyze and make sense of this data. The problem with relying exclusively on in-house government research to make up for the lack of policy-relevant academic research is that it is often of low quality. The role of the “independent policy analyst” is essential for three reasons: 6 He or she can challenge basic policy assumptions. As RAND’s Hans Spier put it, they can undertake “research which does not necessarily take the mission of the military for granted and admits the possibility U.S. may be wrong”7 And academic social scientists are particularly well suited to this role by virtue of the fact that they both conduct research and also teach future policymakers. Academics have some other advantages over policymakers. They have the time to develop greater depth of knowledge on issues and regions than most policymakers can. The institution of tenure also gives them, at least in theory, the freedom to explore controversial issues and take unpopular stands. And while peer review can homogenize and narrow scholarship, it also plays an indisputably positive role in advancing it. Finally, university-based scholars have less of a vested interest in certain policies and programs than do policymakers, though of course that is not to deny that they have their own institutional interests and biases.9 I am not suggesting, of course, that scholars would make better policy than bureaucrats and elected officials. They lack inside knowledge, have little actual power, and are often politically out of step with the rest of American society.10 They also come to policy issues with a markedly different intellectual orientation than policymakers.11 Rather, my point is simply that our democratic political system depends on the successful functioning of the marketplace of ideas and checks and balances in which individuals and groups with various strengths and weaknesses and offsetting biases participate in the larger policy debate, thereby compensating for each other’s limitations.12 We run into trouble when we lack one of these perspectives in policy debates. Indeed, there are instances—the war in Vietnam and the recent Iraq War—in which had the majority consensus of scholars in academia influenced policy, the country’s national interest would have been better served. As the flawed Iraq War debate demonstrates, our nation’s marketplace of ideas is bankrupt, particularly in national security affairs.13 Of course, our political problems run much deeper than just the Beltway/Ivory Tower gap, but closing it would represent an important step in the country’s intellectual recapitalization. This nation’s universities need to reclaim their place as one of society’s main sources of independent ideas about the problems that it faces.14 Less widely recognized, and perhaps more controversial given the prevailing sentiments in the Academy for a sharp distinction between “science” and “policy,” is my contention that the growing gap is ultimately bad for the generation of new knowledge. There are at least two reasons why greater attention to policy relevance produces better scholarship. First, it leads to more realistic theorizing. As John Kenneth Galbraith warned his economics colleagues nearly forty years ago, “No arrangement for the perpetuation of thought is secure if that thought does not make contact with the problems that it is presumed to solve.”15 Second, a focus on manipulatable variables makes it more likely that they are testable because the analyst can ensure variation on them. Also, the hyperspecialization of knowledge today makes it difficult for even scholars in related disciplines to understand each other, much less the general public. Such intellectual fragmentation makes the application of scholarly knowledge to policymaking extremely difficult. Therefore, a deeper and more regular engagement between the Ivory Tower and the Beltway will be mutually beneficial for both sides.16 Ultimately, even the most sophisticated social science will be judged by what it tells us about things that affect the lives of large numbers of people and which policymakers therefore seek to influence and control.17 The recurrent congressional debates about National Science Foundation funding for political science highlight the direct costs to the discipline of not being able to justify itself in terms of broader impact on the rest of society. Harkening back to the debate about the Mansfield Amendment, an article in Science cautioned that “to the extent that the research community disdains work on major national missions or behaves self-servingly in mission-oriented work, anti-intellectualism will increase its influence on the fate of American science.”18 Also, public and philanthropic community support for investment in academia generally reflects the belief that it will produce work that will speak to problems of broader importance. When the academy fails on that score, it can undermine that support.19 Political science’s subfield of international security studies can plausibly claim to save large amounts of money and even lives and so its increasing marginalization is a self-inflicted wound on the discipline. Response to Objections There are at least eight reasonable, though ultimately unpersuasive, objections to my argument that we should consider. First, some point to the influence of the Democratic Peace Theory (DPT) on the Clinton, George W. Bush, and Obama administrations as evidence that one of the most scientific of social science theories in international relations was both useful and influential among policymakers.20 The argument that democracies are unlikely to go to war with each other gained currency among social scientists based on statistical analysis of every major interstate war since 1815. In the words of Rutgers political scientist Jack Levy, the Democratic Peace Theory is “as close as anything we have to an empirical law in international relations.”21 Two scholars argued that the theory became relevant outside of the academy precisely “because of the law-like status of a particular empirical finding.”22 Others hold it up as a model of how basic research in political science can contribute to policymakers.23 It is not clear, though, that the influence of the DPT on recent U.S. foreign policy was due to its unassailable social scientific standing. While former Defense Department official and Ohio State political scientist Joseph Kruzel conceded that DPT “had substantial impact on public policy,” he attributed its attractiveness to policymakers to its simplicity rather than its social scientific rigor.24 It clearly identifies America’s enemies (nondemocratic states) and prescribed a simple response to them (make them democratic). It is also likely that the much less methodologically sophisticated articulation of the theory in the work of Michael Doyle was far more influential.25 And the process by which DPT entered the Clinton White House did not involve sophisticated social science. Rather, the key administration proponent of the democratic peace was National Security Advisor (and former college professor) Anthony Lake.26 It is clear, however, that to the extent that Lake was drawing support for the democratic peace from academic sources, it was not from statistically based research, but rather from the qualitative work of scholars like Harvard’s Samuel Huntington.27 The results of a survey of senior national security policymakers found that more than half of those familiar with the methodologically sophisticated democratic peace theory reported not being influenced by it in their government work.28 Finally, one could argue that U.S. policymakers have embraced the democratic peace because of its compatibility with our political culture rather than its scientific standing.29 A second, and in some ways, flip side of the first critique, is that the relevance problem with contemporary security studies is the result of the subfield’s domination by realism, and particularly its most abstruse and theoretical manifestation, neorealism.30 Critics point particularly to neorealist arguments that tout the virtues of nuclear proliferation as examples of theoretically elegant but politically unacceptable social science.31 Despite its respectability among scholars, neorealist proliferation optimism has reportedly had little influence on actual policy.32 While that particular policy issue may not have been influenced by realist thinking, as this book has shown realists have remained committed to policy relevance at times when the rest of the discipline has eschewed it. And they have more often been on the right side of policy debates as well.33 A third potential challenge to my argument is that many social scientists believe that they should avoid offering policy recommendations in favoring of focusing on basic research tasks such as identifying empirical regularities and offering generalizations to explain them.34 As Dartmouth political scientist Kalman Silvert warned, “It is not the legitimate role of the social scientist as scholar to advocate specific courses of governmental action or to act as implementer of government decisions.”35 Another rationale is that doing so is unnecessary given that the applied implications of basic research tend to trickle down by themselves.36 Policy engagement—particularly offering explicit policy recommendations—is both unwise and unnecessary in the view of many social scientists. Neither of these views, however, are shared by policymakers. Most believe that in addition to providing basic research findings, “scientists must explicitly define the linkage, whether immediate or remote, of the knowledge acquired or being acquired, to specific operational problems and continually assess the import of such knowledge to solution of the problems.”37 Nor are current and former policymakers sanguine about the trickle-down (or bubble-up in which senior policymakers get the results of scholarly work through their methodologically savvy staffs) process. As John K. Plank of the Brookings Institution, a former DoD official, recollected, “There is presumably a process whereby the research product is filtered up to [senior policymakers], but in point of fact very little of operational usefulness is transmitted.”38 Fourth, some political scientists believe that there are now so many new outlets for scholars to engage in the policy debate, it is both easier for them to do so and also unnecessary for them to concern themselves with doing so in their scholarship.39 Academics can now publish basic research in scholarly venues and then disseminate its applied implications through the new media. George Washington political scientist and blogger Marc Lynch effused that with the rise of the new media “this is in most ways a golden age for policy-relevant public spheres.”40 Indeed, many see the proliferation of new media outlets as the answer to political science’s perennial problem: its diminished public profile.41 The assumption here is that political scientists are simply not communicating their results effectively. There are three problems with these arguments: Until recently, we had no idea whether blogs and other new media reached policymakers. As one optimist conceded, we have “no solid statistics” on our impact.42 But we do now and it suggests that blogs and other new media are in fact not an important source of information for policymakers and therefore are unlikely to effectively convey the implications of basic research to policymakers, the media, or the general public.43 Moreover, even if a few blogs get some attention, many others do not, simply making more noise in an already cacophonous marketplace of ideas.44 And suggesting that the failure of communication argument misses the mark, Social Science Research Council president Craig Calhoun noted that scholarly “engagement with public constituencies must move beyond a dissemination model” that assumes that “pure research” will naturally triclde down, even with better communication.45 In other words, it is not the medium that matters as much as the message. And the message must be made more intelligible and useful to policymakers and the general public. Finally, there is systematic evidence that academic bloggers and scholars who utilize other new media venues receive little professional credit for them in the critical areas of promotion and tenure.46 In short, despite the explosive growth of new media outlets, professional incentives still do not encourage scholars to use them. A fifth conceivable objection is that advanced social science techniques and basic research will eventually become more useful to policymakers as they (or at least their staffs) become more sophisticated in their understanding of them. One optimist, for example, noted that most graduate public policy schools now include one or two required courses in economics and social science methods in their curricula. As these increasingly methodologically savvy young bureaucrats become senior policymakers, so this argument goes, they will be more adept at using them and more appreciative of their policy relevance.47 However, this argument assumes that training in advanced research techniques is a recent development. Policy schools, however, have long had methods courses as part of their required curriculum. Even prior to this, many national security policymakers came out of academic Ph.D. programs in which they were exposed to the latest innovations in social science methodology. It also ignores that the security studies subfield played a leading role in developing many of these sophisticated social science techniques, particularly at RAND in the 1950s.48 An example of the reverse flow of ideas from the policy world to the Academy was the “unquestionably” leading role that RAND mathematicians and other social scientists played in the development of game theory, a mathematical framework for strategizing under uncertainty.49 Despite early enthusiasm, many at RAND concluded that game theory had an Achilles Heel in its application to national security policy: how to assign the numerical values that were to be plugged into its formulas. That was not a trivial limitation, which led Hitch to confess that “for our purposes, Game Theory has been quite disappointing.”50 It also assumes that today’s aspiring policymakers come away from these methods courses with an unqualified appreciation of their usefulness. My experience after ten years in teaching in such schools, and familiarity with the evaluations students give these courses, leaves me skeptical. They often do not see the usefulness of such courses and suspect they are being forced to take them for academic, not professional, reasons.51 Other colleagues at professional schools share this impression.52 Finally, an earlier survey of current and former national security policymakers reveals that the more highly educated the policymaker, the greater the skepticism about their utility.53 This is consistent with the argument that familiarity with advanced techniques instills greater appreciation not only for their promise but also their limits. Even proponents of modern social science methods in international relations concede that “the emerging science of international relations has a long way to go before it can be of direct use to policy makers.”54 It is hard to find much evidence that the most sophisticated approaches to international relations are of much direct use to policymakers, and there are ample reasons for caution about how much of the discipline’s “basic” research is really trickling down to indirectly influence policymakers. Sixth, some point to the post-9 /11 resurgence of interest among younger social scientists as a harbinger of another renaissance of interest in policy relevance. Others suggest that changes in the nature of the “new paradigm of knowledge production,” which is “socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities” constitute grounds for optimism about a broader return to relevance among the social sciences.55 To be sure, there are reasons for optimism on this score but also for continuing caution. As we have seen, previous periods of optimism about answering the relevance question have given way to disappointment. Moreover, many scholars have claimed to be policy relevant even though policymakers did not find them so.56 As one CIA analyst warned, “Social scientists commonly define policy-relevant research far more broadly than the foreign policy community does.”57 A seventh potential criticism of my argument is there are other forms of “relevance” beyond just influencing government policymakers by offering policy recommendations to which scholars should aspire.58 Especially in a democratic political system, a scholar’s vocation for politics can also involve educating students and informing the wider public about pressing issues of policy. Moreover, an engaged scholar could serve with nongovernmental and private organizations rather than just through government service. While there is no doubt that policy influence is broader than just affecting government policy, that is ultimately the goal of the enterprise, either directly through policymakers or indirectly through the media or the public. Moreover, it is the clearest and most demanding standard of relevance available. So if we want to understand when and how social science matters to policymakers that is the most important, if not the only, aspect of it to consider.59 Finally, many political scientists share Daniel Drezner’s view that economics has solved the relevance question in being both rigorous and relevant. 60 The logical implication of such a belief is that the rest of social sciences should follow that discipline’s lead in terms of its approach and methodology. This economics envy is based on a misapprehension that academic trends in economics have not also created a relevance problem. For example, a recent review of research at the World Bank by leading academic economists raised questions about how much of the scholarship of bank analysts that was written for publication in academic journals was of any use to the bank.61 Their answer was not much. They blamed intellectual trends in the discipline because it encouraged research that was “too academic, too focused toward the previously existing academic agenda, and too directed towards technical rather than pressing policy issues.”62 Behind this economics envy lies an even deeper inferiority complex visa- vis the natural sciences. Many social scientists believe that the physical sciences have two advantages over the “softer” social sciences: more reliable data and a consensus on how to analyze it. Quantifiable data, in this view, is more persuasive, because it is clearer and less subject to dispute.63 This view of the superiority of the physical over the social sciences is widespread, with many of the former reveling in their preeminence and some of the latter manifesting two classic symptoms of an inferiority complex: resentment or reflexive emulation. Neither of these responses is healthy. It is simply not true that expressing propositions mathematically ensures that they are clearer and more transparent than conveying them in English. Economist Paul Romer admitted that “with enough math, an author can be confident that most readers will never figure out where FWUTV [facts with unknown truth values] is buried. A discussant or referee cannot say that an identification assumption is not credible if they cannot figure out what it is and are too embarrassed to ask.”64 On the latter, one would think that the 2008 Great Recession, in which the misguided belief that quantitative models of the economy could be used to guide investment decisions on the grounds they could reveal “the truth” about what drives the market, would temper confidence that such scientific approaches could ensure effective policy.65 In a much discussed essay in the New York Times Magazine, Princeton economist Paul Krugman concluded that “the economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth.. . . The central cause of the profession’s failure was the desire for an all-encompassing, intellectually elegant approach that also gave economists a chance to show off their mathematical prowess.”66 It is not even clear that natural scientists have been most influential when they have employed their most rigorous and mathematically sophisticated approaches, at least in the national security realm. Indeed, there is more evidence that they have been most influential when they have offered practical solutions to real-world problems. These solutions have often come from scientifically uncertain and incomplete data.67 These are the hallmarks of much of the best of qualitative social science. Social scientists also ought to take heart that they not only can make an important contribution using their own distinct approaches, but also that in some instances they might even be superior to those of the physical scientists. For example, many of the nuclear scientists involved in the Manhattan Project soon came to regret their role in the escalating nuclear arms race of the Cold War. Reflecting a collective sense of guilt, chemist and peace activist Linus Pauling got almost nine thousand scientists to sign a January 1958 petition to end nuclear testing as first step toward universal disarmament.68 Talcing an equally impractical tack, Hungarian physicist Leo Szilard wrote to Franldin Delano Roosevelt’s science adviser Vannevar Bush in January 1944, “This weapon is so powerful that there can be no peace if it is simultaneously in the possession of any two powers unless these two powers are bound by an indissoluble political union.”69 While not all of the atomic scientists harbored doubts—recall the famous debates between Robert Oppenheimer and Edward Teller—the majority became advocates of international control of nuclear weapons, a policy that in retrospect was politically unrealistic. In comparing the assessments and policy recommendations of the physical scientists in the Golden Age, with those of social scientists like Jacob Viner, Bernard Brodie, and William T. R Fox, it is hard to avoid the conclusion that the latter’s views of the nuclear problem (that the genie of nuclear weapons could not be stuffed back in the bottle), and their recommendations for dealing with that situation (nuclear deterrence), were far more “realistic” than those of the nuclear “one world” physical scientists. What Is to Be Done? There are, of course, some nuts-and-bolts issues that scholars should be mindful of if they want to participate in the broader policy debate. Since policymakers have short attention spans given the number and breadth of issues they have to deal with, scholarly efforts to engage them need to be brief in conveying their ideas.70 This explains why Op/Eds are particularly influential and why so many are optimistic that blogs could play a similar role. Moreover, policymakers find much current scholarly work—from across the methodological spectrum—inaccessible. The common sentiment animating their views is that scholars should cut the jargon. Policymakers don’t want scholars to write in Greek or French, but rather just plain English.71 There are also some much bigger issues undergirding the relevance question.72 To begin with, political science needs to rethink how it balances scholarly rigor with practical application. There is a middle ground between policy analysis and journalism, on one side, and scholastic irrelevance on the other.73 The best approach to balancing scholarly rigor with continuing policy relevance is methodological pluralism, which includes a commitment to using not any particular method (or all of them) but rather just the approach most appropriate for the question at hand. But methodological pluralism, by itself, is not sufficient. The latest trend in political science requiring the simultaneous use of multiple methods could, ironically, prove to be even more limiting of policy relevance. Indeed, given the need to employ all of these methods simultaneously, it is potentially even more constraining in terms of the problems it can address because it has to be limited to those which can be quantified, modeled, and studied in depth at the same time.74 Therefore, reinforcing methodological pluralism must also be a commitment to problem-, rather than method-, driven research agendas. It is only the combination of these two principles that will ensure that policy-relevant security studies can not only survive, but thrive, in political science.75 Scholars also need to think carefully about the role of theory in policyrelevant security studies scholarship. While there is no doubt that theory is important to policymakers, scholars need to be aware that as with many other things, too much of it can be a bad thing. In particular, the effort to cram the rich complexity of the social world into universal models can do intellectual violence to the phenomenon under study as well as produce suboptimal policy. Paul Nitze, then the director of the Secretary of State’s Policy Planning Staff, readily conceded policymakers’ need for theory but also noted that “there is the opposing consideration .. . that [theoretical] oversimplification presents great dangers.”76 Albert Wohlstetter advocated a balanced approach to theory, noting that the key to his success throughout his career “was the practical experience I had in working with engineers. I worked with them from two sides, so to speak, as someone who had been concerned with very abstract theory more basic than that familiar to design engineers, but on the other hand, I was also concerned with production, and therefore generally trying to get them to do things more practical than they wanted to do.”77 Theory is a powerful tool of statecraft, but when scholars embrace universal models they also risk irrelevance or worse. Likewise, the transmission belts conveying scholarly findings to the policy world must be repaired. Kennan envisioned the State Department’s Policy Planning Staff in the late 1940s serving this function, and in some respects it continues to do so to this day.78 However, there are limits to how effectively a part of the bureaucracy can serve as an honest research broker. A plethora of think tanks in Washington are also supposed to translate knowledge into action, though the trend in recent years has been toward the establishment of overtly political and advocacy organizations, rather than nonpartisan, translational research centers.79 Reinventing the role of think tanks as bridges between the Ivory Tower and the beltway is long overdue. While nonacademic transmission belts can mediate between the Ivory Tower and the Beltway, they are no substitute for the scholars who produce knowledge to themselves serve as their own translators of it into policy. To be sure, scholars should not stop writing scholarly books and monographs utilizing the most sophisticated techniques of their discipline, if appropriate. In addition to doing these things, scholars should address pressing real world problems, not just chase after disciplinary fads. No one is in a better position to highlight the policy implications of a given piece of research than the individual who conducted it. Academic social scientists, if they want to be heard by senior policymakers, and heard correctly, need to be their own policy “transmission belts.”80 The role of the Democratic Peace Theory in the recent Iraq war demonstrates the problems with scholars not specifying the concrete policy implications of their research.81 Drawing on DPT, some officials in the George W. Bush administration justified the invasion of Iraq as part of a larger strategy to bring peace to the region by spreading democracy.82 Democratic Peace proponent Bruce Russett objected to this conclusion after the fact though his voice had been largely mute in the run up to the war.83 Had he and other democracy scholars participated more actively in the prewar debate, this rationale may have been less credible. Academics also need to develop a more nuanced appreciation of the various influences on policy. Many, even in democratic political systems, tend to have an unrealistically “technocratic” attitude toward policymaking. 84 They often underestimate the role of politics in government decision making. Scholars must therefore understand that the policymaking process is inherently political and that without such an appreciation of the political considerations associated with any policy choice, even a good one may not be implemented.85

#### **Realism is accurate---reps and morality can’t determine political action**

de Araujo 14 [Marcelo, professor for Ethics at Universidade do Estado do Rio de Janeiro, “Moral Enhancement and Political Realism,” Journal of Evolution and Technology 24(2): 29-43]

Some moral enhancement theorists argue that a society of morally enhanced individuals would be in a better position to cope with important problems that humankind is likely to face in the future such as, for instance, the threats posed by climate change, grand scale terrorist attacks, or the risk of catastrophic wars. The assumption here is quite simple: our inability to cope successfully with these problems stems mainly from a sort of deficit in human beings’ moral motivation. If human beings were morally better – if we had enhanced moral dispositions – there would be fewer wars, less terrorism, and more willingness to save our environment. Although simple and attractive, this assumption is, as I intend to show, false. At the root of threats to the survival of humankind in the future is not a deficit in our moral dispositions, but the endurance of an old political arrangement that prevents the pursuit of shared goals on a collective basis. The political arrangement I have in mind here is the international system of states. In my analysis of the political implications of moral enhancement, I intend to concentrate my attention only on the supposition that we could avoid major wars in the future by making individuals morally better. I do not intend to discuss the threats posed by climate change, or by terrorism, although some human enhancement theorists also seek to cover these topics. I will explain, in the course of my analysis, a conceptual distinction between “human nature realism” and “structural realism,” well-known in the field of international relations theory. Thomas Douglas seems to have been among the first to explore the idea of “moral enhancement” as a new form of human enhancement. He certainly helped to kick off the current phase of the debate. In a paper published in 2008, Douglas suggests that in the “future people might use biomedical technology to morally enhance themselves.” Douglas characterizes moral enhancement in terms of the acquisition of “morally better motives” (Douglas 2008, 229). Mark Walker, in a paper published in 2009, suggests a similar idea. He characterizes moral enhancement in terms of improved moral dispositions or “genetic virtues”: The Genetic Virtue Program (GVP) is a proposal for influencing our moral nature through biology, that is, it is an alternate yet complementary means by which ethics and ethicists might contribute to the task of making our lives and world a better place. The basic idea is simple enough: genes influence human behavior, so altering the genes of individuals may alter the influence genes exert on behavior. (Walker 2009, 27–28) Walker does not argue in favor of any specific moral theory, such as, for instance, virtue ethics. Whether one endorses a deontological or a utilitarian approach to ethics, he argues, the concept of virtue is relevant to the extent that virtues motivate us either to do the right thing or to maximize the good (Walker 2009, 35). Moral enhancement theory, however, does not reduce the ethical debate to the problem of moral dispositions. Morality also concerns, to a large extent, questions about reasons for action. And moral enhancement, most certainly, will not improve our moral beliefs; neither could it be used to settle moral disagreements. This seems to have led some authors to criticize the moral enhancement idea on the ground that it neglects the cognitive side of our moral behavior. Robert Sparrow, for instance, argues that, from a Kantian point of view, moral enhancement would have to provide us with better moral beliefs rather than enhanced moral motivation (Sparrow 2014, 25; see also Agar 2010, 74). Yet, it seems to me that this objection misses the point of the moral enhancement idea. Many people, across different countries, already share moral beliefs relating, for instance, to the wrongness of harming or killing other people arbitrarily, or to the moral requirement to help people in need. They may share moral beliefs while not sharing the same reasons for these beliefs, or perhaps even not being able to articulate the beliefs in the conceptual framework of a moral theory (Blackford 2010, 83). But although they share some moral beliefs, in some circumstances they may lack the appropriate motivation to act accordingly. Moral enhancement, thus, aims at improving moral motivation, and leaves open the question as to how to improve our moral judgments. In a recent paper, published in The Journal of Medical Ethics, neuroscientist Molly Crockett reports the state of the art in the still very embryonic field of moral enhancement. She points out, for example, that the selective serotonin reuptake inhibitor (SSRI) citalopram seems to increase harm aversion. There is, moreover, some evidence that this substance may be effective in the treatment of specific types of aggressive behavior. Like Douglas, Crockett emphasizes that moral enhancement should aim at individuals’ moral motives (Crockett 2014; see also Spence 2008; Terbeck et al. 2013). Another substance that is frequently mentioned in the moral enhancement literature is oxytocin. Some studies suggest that willingness to cooperate with other people,and to trust unknown prospective cooperators, may be enhanced by an increase in the levels of oxytocin in the organism (Zak 2008, 2011; Zak and Kugler 2011; Persson and Savulescu 2012, 118–119). Oxytocin has also been reported to be “associated with the subjective experience of empathy” (Zak 2011, 55; Zak and Kugler 2011, 144). The question I would like to examine now concerns the supposition that moral enhancement – comprehended in these terms and assuming for the sake of argument that, some day, it might become effective and safe – may also help us in coping with the threat of devastating wars in the future. The assumption that there is a relationship between, on the one hand, threats to the survival of humankind and, on the other, a sort of “deficit” in our moral dispositions is clearly made by some moral enhancements theorists. Douglas, for instance, argues that “according to many plausible theories, some of the world’s most important problems — such as developing world poverty, climate change and war — can be attributed to these moral deficits” (2008, 230). Walker, in a similar vein, writes about the possibility of “using biotechnology to alter our biological natures in an effort to reduce evil in the world” (2009, 29). And Julian Savulescu and Ingmar Persson go as far as to defend the “the need for moral enhancement” of humankind in a series of articles, and in a book published in 2012. One of the reasons Savulescu and Persson advance for the moral enhancement of humankind is that our moral dispositions seem to have remained basically unchanged over the last millennia (Persson and Savulescu 2012, 2). These dispositions have proved thus far quite useful for the survival of human beings as a species. They have enabled us to cooperate with each other in the collective production of things such as food, shelter, tools, and farming. They have also played a crucial role in the creation and refinement of a variety of human institutions such as settlements, villages, and laws. Although the possibility of free-riding has never been fully eradicated, the benefits provided by cooperation have largely exceeded the disadvantages of our having to deal with occasional uncooperative or untrustworthy individuals (Persson and Savulescu 2012, 39). The problem, however, is that the same dispositions that have enabled human beings in the past to engage in the collective production of so many artifacts and institutions now seem powerless in the face of the human capacity to destroy other human beings on a grand scale, or perhaps even to annihilate the entire human species. There is, according to Savulescu and Persson, a “mismatch” between our cognitive faculties and our evolved moral attitudes: “[…] as we have repeatedly stressed, owing to the progress of science, the range of our powers of action has widely outgrown the range of our spontaneous moral attitudes, and created a dangerous mismatch” (Persson and Savulescu 2012, 103; see also Persson and Savulescu 2010, 660; Persson and Savulescu 2011b; DeGrazie 2012, 2; Rakić 2014, 2). This worry about the mismatch between, on the one hand, the modern technological capacity to destroy and, on the other, our limited moral commitments is not new. The political philosopher Hans Morgenthau, best known for his defense of political realism, called attention to the same problem nearly fifty years ago. In the wake of the first successful tests with thermonuclear bombs, conducted by the USA and the former Soviet Union, Morgenthau referred to the “contrast” between the technological progress of our age and our feeble moral attitudes as one of the most disturbing dilemmas of our time: The first dilemma consists in the contrast between the technological unification of the world and the parochial moral commitments and political institutions of the age. Moral commitments and political institutions, dating from an age which modern technology has left behind, have not kept pace with technological achievements and, hence, are incapable of controlling their destructive potentialities. (Morgenthau 1962, 174) Moral enhancement theorists and political realists like Morgenthau, therefore, share the thesis that our natural moral dispositions are not strong enough to prevent human beings from endangering their own existence as a species. But they differ as to the best way out of this quandary: moral enhancement theorists argue for the re-engineering of our moral dispositions, whereas Morgenthau accepted the immutability of human nature and argued, instead, for the re-engineering of world politics. Both positions, as I intend to show, are wrong in assuming that the “dilemma” results from the weakness of our spontaneous moral dispositions in the face of the unprecedented technological achievements of our time. On the other hand, both positions are correct in recognizing the real possibility of global catastrophes resulting from the malevolent use of, for instance, biotechnology or nuclear capabilities. The supposition that individuals’ unwillingness to cooperate with each other, even when they would be better-off by choosing to cooperate, results from a sort of deficit of dispositions such as altruism, empathy, and benevolence has been at the core of some important political theories. This idea is an important assumption in the works of early modern political realists such as Machiavelli and Thomas Hobbes. It was also later endorsed by some well-known authors writing about the origins of war in the first half of the twentieth century. It was then believed, as Sigmund Freud suggested in a text from 1932, that the main cause of wars is a human tendency to “hatred and destruction” (in German: ein Trieb zum Hassen und Vernichtung). Freud went as far as to suggest that human beings have an ingrained “inclination” to “aggression” and “destruction” (Aggressionstrieb, Aggressionsneigung, and Destruktionstrieb), and that this inclination has a “good biological basis” (biologisch wohl begründet) (Freud 1999, 20–24; see also Freud 1950; Forbes 1984; Pick 1993, 211–227; Medoff 2009). The attempt to employ Freud’s conception of human nature in understanding international relations has recently been resumed, for instance by Kurt Jacobsen in a paper entitled “Why Freud Matters: Psychoanalysis and International Relations Revisited,” published in 2013. Morgenthau himself was deeply influenced by Freud’s speculations on the origins of war.1 Early in the 1930s, Morgenthau wrote an essay called “On the Origin of the Political from the Nature of Human Beings” (Über die Herkunft des Politischen aus dem Wesen des Menschen), which contains several references to Freud’s theory about the human propensity to aggression.2 Morgenthau’s most influential book, Politics among Nations: The Struggle for Power and Peace, first published in 1948 and then successively revised and edited, is still considered a landmark work in the tradition of political realism. According to Morgenthau, politics is governed by laws that have their origin in human nature: “Political realism believes that politics, like society in general, is governed by objective laws that have their roots in human nature” (Morgenthau 2006, 4). Just like human enhancement theorists, Morgenthau also takes for granted that human nature has not changed over recent millennia: “Human nature, in which the laws of politics have their roots, has not changed since the classical philosophies of China, India, and Greece endeavored to discover these laws” (Morgenthau 2006, 4). And since, for Morgenthau, human nature prompts human beings to act selfishly, rather than cooperatively, political leaders will sometimes favor conflict over cooperation, unless some superior power compels them to act otherwise. Now, this is exactly what happens in the domain of international relations. For in the international sphere there is not a supranational institution with the real power to prevent states from pursuing means of self-defense. The acquisition of means of self-defense, however, is frequently perceived by other states as a threat to their own security. This leads to the security dilemma and the possibility of war. As Morgenthau put the problem in an article published in 1967: “The actions of states are determined not by moral principles and legal commitments but by considerations of interest and power” (1967, 3). Because Morgenthau and early modern political philosophers such as Machiavelli and Hobbes defended political realism on the grounds provided by a specific conception human nature, their version of political realism has been frequently called “human nature realism.” The literature on human nature realism has become quite extensive (Speer 1968; Booth 1991; Freyberg-Inan 2003; Kaufman 2006; Molloy 2006, 82–85; Craig 2007; Scheuerman 2007, 2010, 2012; Schuett 2007; Neascu 2009; Behr 2010, 210–225; Brown 2011; Jütersonke 2012). It is not my intention here to present a fully-fledged account of the tradition of human nature realism, but rather to emphasize the extent to which some moral enhancement theorists, in their description of some of the gloomy scenarios humankind is likely to face in the future, implicitly endorse this kind of political realism. Indeed, like human nature realists, moral enhancement theorists assume that human nature has not changed over the last millennia, and that violence and lack of cooperation in the international sphere result chiefly from human nature’s limited inclination to pursue morally desirable goals. One may, of course, criticize the human enhancement project by rejecting the assumption that conflict and violence in the international domain should be explained by means of a theory about human nature. In a reply to Savulescu and Persson, Sparrow correctly argues that “structural issues,” rather than human nature, constitute the main factor underlying political conflicts (Sparrow 2014, 29). But he does not explain what exactly these “structural issues” are, as I intend to do later. Sparrow is right in rejecting the human nature theory underlying the human enhancement project. But this underlying assumption, in my view, is not trivially false or simply “ludicrous,” as he suggests. Human nature realism has been implicitly or explicitly endorsed by leading political philosophers ever since Thucydides speculated on the origins of war in antiquity (Freyberg-Inan 2003, 23–36). True, it might be objected that “human nature realism,” as it was defended by Morgenthau and earlier political philosophers, relied upon a metaphysical or psychoanalytical conception of human nature, a conception that, actually, did not have the support of any serious scientific investigation (Smith 1983, 167). Yet, over the last few years there has been much empirical research in fields such as developmental psychology and evolutionary biology that apparently gives some support to the realist claim. Some of these studies suggest that an inclination to aggression and conflict has its origins in our evolutionary history. This idea, then, has recently led some authors to resume “human nature realism” on new foundations, devoid of the metaphysical assumptions of the early realists, and entirely grounded in empirical research. Indeed, some recent works in the field of international relations theory already seek to call attention to evolutionary biology as a possible new start for political realism. This point is clearly made, for instance, by Bradley Thayer, who published in 2004 a book called Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict. And in a paper published in 2000, he affirms the following: Evolutionary theory provides a stronger foundation for realism because it is based on science, not on theology or metaphysics. I use the theory to explain two human traits: egoism and domination. I submit that the egoistic and dominating behavior of individuals, which is commonly described as “realist,” is a product of the evolutionary process. I focus on these two traits because they are critical components of any realist argument in explaining international politics. (Thayer 2000, 125; see also Thayer 2004) Thayer basically argues that a tendency to egoism and domination stems from human evolutionary history. The predominance of conflict and competition in the domain of international politics, he argues, is a reflex of dispositions that can now be proved to be part of our evolved human nature in a way that Morgenthau and other earlier political philosophers could not have established in their own time. Now, what some moral enhancement theorists propose is a direct intervention in our “evolved limited moral psychology” as a means to make us “fit” to cope with some possible devastating consequences from the predominance of conflict and competition in the domain of international politics (Persson and Savulescu 2010, 664). Moral enhancement theorists comprehend the nature of war and conflicts, especially those conflicts that humankind is likely to face in the future, as the result of human beings’ limited moral motivations. Compared to supporters of human nature realism, however, moral enhancement theorists are less skeptical about the prospect of our taming human beings’ proclivity to do evil. For our knowledge in fields such as neurology and pharmacology does already enable us to enhance people’s performance in a variety of activities, and there seems to be no reason to assume it will not enable us to enhance people morally in the future. But the question, of course, is whether moral enhancement will also improve the prospect of our coping successfully with some major threats to the survival of humankind, as Savulescu and Persson propose, or to reduce evil in the world, as proposed by Walker. V. The point to which I would next like to call attention is that “human nature realism” – which is implicitly presupposed by some moral enhancement theorists – has been much criticized over the last decades within the tradition of political realism itself. “Structural realism,” unlike “human nature realism,” does not seek to derive a theory about conflicts and violence in the context of international relations from a theory of the moral shortcomings of human nature. Structural realism was originally proposed by Kenneth Waltz in Man, the State and War, published in 1959, and then later in another book called Theory of International Politics, published in 1979. In both works, Waltz seeks to avoid committing himself to any specific conception of human nature (Waltz 2001, x–xi). Waltz’s thesis is that the thrust of the political realism doctrine can be retained without our having to commit ourselves to any theory about the shortcomings of human nature. What is relevant for our understanding of international politics is, instead, our understanding of the “structure” of the international system of states (Waltz 1986). John Mearsheimer, too, is an important contemporary advocate of political realism. Although he seeks to distance himself from some ideas defended by Waltz, he also rejects human nature realism and, like Waltz, refers to himself as a supporter of “structural realism” (Mearsheimer 2001, 20). One of the basic tenets of political realism (whether “human nature realism” or “structural realism”) is, first, that the states are the main, if not the only, relevant actors in the context of international relations; and second, that states compete for power in the international arena. Moral considerations in international affairs, according to realists, are secondary when set against the state’s primary goal, namely its own security and survival. But while human nature realists such as Morgenthau explain the struggle for power as a result of human beings’ natural inclinations, structural realists like Waltz and Mearsheimer argue that conflicts in the international arena do not stem from human nature, but from the very “structure” of the international system of states (Mearsheimer 2001, 18). According to Waltz and Mearsheimer, it is this structure that compels individuals to act as they do in the domain of international affairs. And one distinguishing feature of the international system of states is its “anarchical structure,” i.e. the lack of a central government analogous to the central governments that exist in the context of domestic politics. It means that each individual state is responsible for its own integrity and survival. In the absence of a superior authority, over and above the power of each sovereign state, political leaders often feel compelled to favor security over morality, even if, all other things being considered, they would naturally be more inclined to trust and to cooperate with political leaders of other states. On the other hand, when political leaders do trust and cooperate with other states, it is not necessarily their benevolent nature that motivates them to be cooperative and trustworthy, but, again, it is the structure of the system of states that compels them. The concept of human nature, as we can see, does not play a decisive role here. Because Waltz and Mearsheimer depart from “human nature realism,” their version of political realism has also sometimes been called “neo-realism” (Booth 1991, 533). Thus, even if human beings turn out to become morally enhanced in the future, humankind may still have to face the same scary scenarios described by some moral enhancement theorists. This is likely to happen if, indeed, human beings remain compelled to cooperate within the present structure of the system of states. Consider, for instance, the incident with a Norwegian weather rocket in January 1995. Russian radars detected a missile that was initially suspected of being on its way to reach Moscow in five minutes. All levels of Russian military defense were immediately put on alert for a possible imminent attack and massive retaliation. It is reported that for the first time in history a Russian president had before him, ready to be used, the “nuclear briefcase” from which the permission to launch nuclear weapons is issued. And that happened when the Cold War was already supposed to be over! In the event, it was realized that the rocket was leaving Russian territory and Boris Yeltsin did not have to enter the history books as the man who started the third world war by mistake (Cirincione 2008, 382).3 But under the crushing pressure of having to decide in such a short time, and on the basis of unreliable information, whether or not to retaliate, even a morally enhanced Yeltsin might have given orders to launch a devastating nuclear response – and that in spite of strong moral dispositions to the contrary. Writing for The Guardian on the basis of recently declassified documents, Rupert Myers reports further incidents similar to the one of 1995. He suggests that as more states strive to acquire nuclear capability, the danger of a major nuclear accident is likely to increase (Myers 2014). What has to be changed, therefore, is not human moral dispositions, but the very structure of the political international system of states within which we currently live. As far as major threats to the survival of humankind are concerned, moral enhancement might play an important role in the future only to the extent that it will help humankind to change the structure of the system of states. While moral enhancement may possibly have desirable results in some areas of human cooperation that do not badly threaten our security – such as donating food, medicine, and money to poorer countries – it will not motivate political leaders to dismantle their nuclear weapons. Neither will it deter other political leaders from pursuing nuclear capability, at any rate not as long as the structure of international politics compels them to see prospective cooperators in the present as possible enemies in the future. The idea of a “structure” should not be understood here in metaphysical terms, as though it mysteriously existed in a transcendent world and had the magical power of determining leaders’ decisions in this world. The word “structure” denotes merely a political arrangement in which there are no powerful law-enforcing institutions. And in the absence of the kind of security that law-enforcing institutions have the force to create, political leaders will often fail to cooperate, and occasionally engage in conflicts and wars, in those areas that are critical to their security and survival. Given the structure of international politics and the basic goal of survival, this is likely to continue to happen, even if, in the future, political leaders become less egoistic and power-seeking through moral enhancement. On the other hand, since the structure of the international system of states is itself another human institution, there is no reason to suppose that it cannot ever be changed. If people become morally enhanced in the future they may possibly feel more strongly motivated to change the structure of the system of states, or perhaps even feel inclined to abolish it altogether. In my view, however, addressing major threats to the survival of humankind in the future by means of bioengineering is unlikely to yield the expected results, so long as moral enhancement is pursued within the present framework of the international system of states.