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## OFF

#### Interpretation: The affirmative should only defend the hypothetical implementation of the resolution

#### 1] Resolved means a legislative policy

Words and Phrases 64 Words and Phrases Permanent Edition. “Resolved”. 1964. ED

Definition of the word “resolve,” given by Webster is “to express an opinion or determination by resolution or vote; as ‘it was resolved by the legislature;” It is of similar force to the word “enact,” which is defined by Bouvier as meaning “to establish by law”.

#### 2] “Appropriation” means to take as property – prefer our definition since it’s contextual to space

Leon 18 (Amanda M., Associate, Caplin & Drysdale, JD UVA Law) "Mining for Meaning: An Examination of the Legality of Property Rights in Space Resources." Virginia Law Review, vol. 104, no. 3, May 2018, p. 497-547. HeinOnline.

Appropriation. The term "appropriation" also remains ambiguous. Webster's defines the verb "appropriate" as "to take to oneself in exclusion of others; to claim or use as by an exclusive or pre-eminent right; as, let no man appropriate a common benefit."16 5 Similarly, Black's Law Dictionary describes "appropriate" as an act "[t]o make a thing one's own; to make a thing the subject of property; to exercise dominion over an object to the extent, and for the purpose, of making it subserve one's own proper use or pleasure."166 Oftentimes, appropriation refers to the setting aside of government funds, the taking of land for public purposes, or a tort of wrongfully taking another's property as one's own. The term appropriation is often used not only with respect to real property but also with water. According to U.S. case law, a person completes an appropriation of water by diversion of the water and an application of the water to beneficial use.167 This common use of the term "appropriation" with respect to water illustrates two key points: (1) the term applies to natural resources-e.g., water or minerals-not just real property, and (2) mining space resources and putting them to beneficial use-e.g., selling or manufacturing the mined resources could reasonably be interpreted as an "appropriation" of outer space. While the ordinary meaning of "appropriation" reasonably includes the taking of natural resources as well as land, whether the drafters and parties to the OST envisioned such a broad meaning of the term remains difficult to determine with any certainty. The prohibition against appropriation "by any other means" supports such a reading, though, by expanding the prohibition to other types not explicitly described.168

As illustrated by this analysis, considerable ambiguity remains after this ordinary-meaning analysis and thus, the question of Treaty obligations and property rights remains unresolved. In order to resolve these ambiguities, an analysis of preparatory materials, historical context, and state practice follows.

2. Preparatory Materials

A review of meeting reports of the Committee on the Peaceful Uses of Outer Space and its Legal Sub-Committee regarding the Treaty reveals little to clear up the ambiguities of Articles I and II of the OST. In fact, the reports indicate that, despite several negotiating states expressing concern about the lack of clarity with respect to the meaning of "use" and the scope of the non-appropriation principle, no meaningful discussion occurred and no consensus was reached.16 9 Some commentators still conclude that the preparatory work does in fact confirm the drafters' intent for "use" to include exploitation. 170 These commentators do admit, however, that discussions of the term "exploitation" supporting their conclusion focused on remote sensing and communications satellites rather than on resource extraction.17 1 Further skepticism about such an intent for "use" to include "exploitation" also arises given the uncertainty amongst negotiating states about the meaning of these terms. A mere few months before the Treaty opened for signature in January 1967, negotiators were still asking questions about the meaning of "use" during the last few Legal Sub-Committee meetings. For example, in July 1966, the representative of France inquired: "Did the latter term ["use"] imply use for exploration purposes, such as the launching of satellites, or did it mean use in the sense of exploitation, which would involve far more complex issues?" 172 The representative noted that while some activities such as extraction of minerals were difficult to imagine presently, "[i]t was important for all States, and not only those engaged in space exploration, to know exactly what was meant by the term 'use.'173 In the same meeting, the representative from the USSR offered an interesting response to the question posed by the representative of France:

[A]dequate clarification was to be found in article II of the USSR draft, which specified that outer space and celestial bodies should not be subject to national appropriation by means of use or occupation, or by any other means. In other words no human activity on the moon or any other celestial body could be taken as justification for national appropriation. 174

This response implies that Article II acts as a qualification on Article I's broad provision for free exploration and use of outer space by all. Activity such as resource extraction would be viewed as national appropriation and such activity cannot be justified given Article II's prohibition, not even by falling within the ordinary meaning of "use." Despite this clarification, uncertainty appears to have remained, as lingering concerns were communicated in subsequent meetings by several other states, including Australia, Austria, and France."' Nevertheless, the committee put the Treaty in front of the General Assembly two months later without final resolution of the ambiguities regarding property rights arising from Articles I and II176 The preparatory materials ultimately fail to fully clarify the ambiguities of the meanings of "use" and "appropriation." The statement of the representative of the Soviet Union, one of the two main drafting parties, does, however, help push back on the interpretation of some academics that the nonappropriation principle fails to overcome the presumption of freedom of use.7

3. Historical Context

Two interrelated, major historical events cannot be ignored when considering the meaning of the OST: (1) the Cold War and (2) the Space Race. The success of Sputnik I in 1957 showed space travel and exploration no longer to be a dream, but a reality.7 While exciting, this news also brought fear in light of the world's fragile balance of power and tensions between the United States and the Soviet Union. 17 9 What if the Soviet Union managed to launch a nuclear weapon into space? What if the United States greedily claimed the Moon as the fifty-first state? To many, the combination of the Cold War and Space Race made the late 1950s and the 1960s a perilous time.so When viewed as a response to this perilous era, the OST begins to look much more like a nuclear arms treaty and an attempt to ease Cold War tensions than a treaty concerned with the issue of property rights in space."' The Treaty's emphasis on "peaceful purposes" supports this contextual interpretation. 1 82

On the one hand, as many suggest, this context leads to the conclusion that the vague nonappropriation principle of Article II does not prevent private property rights in space resources and the presumption of broad "use" prevails.1 83 Private property rights were simply not a concern of the Treaty drafters and therefore, the Treaty does not address-nor prohibit-such claims. On the other hand, the context surrounding the treaty's drafting does not necessarily lead to this conclusion. In fact, the emphasis on "peaceful purposes" and reducing international tension might instead suggest a stricter reading of Articles I and II. If things were so unstable and tense on Earth, the drafters may have instead intended Article II as a qualification on the general right to explore and use outer space in Article I, recognizing the simple fact that disputes over property, both land and minerals, have sparked some of history's bloodiest conflicts.

The Antarctic treaty experience evidences Cold War concern over potential resource rights disputes. Leading up to the finalization of the Antarctic Treaty of 1959,184 seven nations had already made official territorial claims over varying portions of the frozen landscape in hopes of laying claim to the plethora of resources thought to be located within the subsurface."' Although the Treaty itself did not directly address rights to mineral resources in the Antarctic,186 the treaty is interpreted to have frozen these claims in the interest of "[f]reedom of scientific investigation in Antarctica and cooperation toward that end.""' In a manner notably similar to the terms of Articles XI and XII of the OST, the Treaty promotes scientific exploration by encouraging information sharing of scientific program plans, personnel, and observations' and inspection of stations on a reciprocal basis.189 This Treaty along with several later treaties and protocols constitute the "Antarctic Treaty System," which as a whole manages the governance of Antarctica.1 9 0 In 1991, the Protocol on Environmental Protection to the Antarctic Treaty 91 ("Madrid Protocol") settled the question of property rights for the fifty years following the Protocol's entry into force. 192 The Madrid Protocol provides for "the comprehensive protection of the Antarctic environment ... [and] designate[s] Antarctica as a natural reserve, devoted to peace and science."193 Article 7 explicitly-and simplystates "[a]ny activity relating to mineral resources, other than scientific research, shall be prohibited."1 94 Though Article 25 allows for the creation of a binding legal regime to determine whether and under what conditions mineral resource activity be allowed, no such international legal regime has been created to date. 195 The ban on mineral resource exploitation may only be amended by unanimous consent of the parties. 19 6 The United States signed and ratified both the Antarctic Treaty of 1959 and the Madrid Protocol. 197

The freezing of territorial claims in the Antarctic 98 by the Antarctica Treaty of 1959199 illustrates the existence of true concern over potential resource dispute and conflict during the Cold War, in addition to the major concerns posed by nuclear weapons.2 00 The drafting states also recognized the potential for conflict over property in outer space and drew on the language of the Antarctic Treaty of 1959 to draft the OST.2 01 Given these driving concerns, Article II could be reasonably read as qualifying Article I's general rule. Under this reading, Article II serves the same qualifying purpose as Article IV regarding military and nuclear weapon use in space. Some might push back on this interpretation by claiming that the drafters could have used language such as that in the Madrid Protocol to explicitly prohibit mining in space. However, this argument is flawed. The Madrid Protocol was not written until well after both the original Antarctic Treaty of 1959 and the OST. Furthermore, the timing of the Madrid Protocol perhaps provides further evidence that resources in space are not to be harvested until a subsequent agreement regarding rights over them can be agreed upon internationally. While the historical context does leave some ambiguity as to whether the OST permits property rights over space resources, the Antarctic experience provides a compelling analogy and suggests that the OST does not allow for property rights in space resources.

4. State Practice

In its Frequently Asked Questions released about the SREU Act, the House Committee on Science, Space, and Technology forcefully asserted that the Act does not violate international law.20 2 in fact, according to the committee, the Act's provision of property rights "is affirmed by State practice and by the U.S. State Department in [c]ongressional testimony and written correspondence."2 03 Proponents of this view base their beliefs on several examples. One, "no serious objection" arose to the United States and the Soviet Union bringing samples of rocks and other materials from the Moon back by manned and robotic missions in the late 1960s, nor to Japan successfully collecting a small asteroid sample in 2010.204 Two, a practice of respecting ownership over such retrieved samples and a terrestrial market for such items exists, as illustrated by the fact that no one doubts that the American Museum of Natural History "owns" three asteroids found in Greenland by arctic explorer Robert E. Peary that are now part of the museum's Arthur Ross Hall of Meteorites. 205 Three, Congressmen also cite to a federal district court case, United States v. One Lucite Ball Containing Lunar Material,2 06 to illustrate state practice in favor of ownership over spaces resources. The case involved an Apollo lunar sample gifted to Honduras by the United States. The sample was stolen and sold to an individual in the United States.2 07 When caught during a sting operation intended to uncover illegal sales of imposter samples, the buyer was forced to forfeit the lunar sample after the court concluded the moon rocks had in fact been stolen, basing its decision in part on its recognition of Honduras having national property ownership over the sample. 208

These examples appear overwhelming, but they are not actually examples of activities of the same "form and content" that the SREU Act approves. 2 09 These examples all involve collection of samples in limited amounts and for scientific purposes, while the SREU Act approves large-scale collection and for commercial exploitation. The OST explicitly emphasizes a "freedom of scientific investigation in outer space," and the collection of scientific samples reasonably fall under this enumerated right. 2 10 Alternatively, the OST says nothing with respect to commercial exploitation, only discussing "benefits" of space in terms of sharing those benefits with all mankind.211 Furthermore, the American Museum of Natural History and Lucite Ball examples relied upon are misleading because they suggest that types of celestial artifacts found or gifted on Earth are subject to the same legal regime as resources mined or collected in space, which may not necessarily be true. The analogy of ownership over fish extracted from the high seas is also often cited in response to this pushback. Much like outer space, the high seas are open to all participants, yet the law of the seas still recognizes the right to title over fish extracted on the high seas by fishermen, who can then sell the fish.212 But again, this analogy has limited import because both the 1958 Geneva Convention on the High Seas and the United Nations Convention on the Law of the Sea ("UNCLOS") explicitly recognize the right to fish, while the OST grants no such right to exploit space resources. 2 1 3

Furthermore, state practice relevant to the question of property rights under the OST goes beyond these examples and analogies of ownership of resources taken from commons. State practice regarding property rights in general must be considered. For example, Professor Fabio Tronchetti disagrees with the oft-cited notion that state practice affirms the SREU Act.2 14 According to the professor, "under international law, property rights require a superior authority, a State, entitled to attribute and enforce them." 2 15 By granting property rights in the SREU Act, the United States impliedly claims that it has the authority to confer property rights over space resources-an authority traditionally reserved for the owner of a resource. This notion clashes with the nonappropriation principles of the OST. Though there is no consensus regarding whether the nonappropriation principle prohibits claims of sovereignty over resources, a strong consensus at least exists that the principle prohibits states from claiming sovereignty over real property in space.216 In some traditional systems of mineral ownership, however, ownership over resources ran with ownership over land.217 For example, under Roman law, property rights over subsurface minerals belonged to the landowner. 2 18 Thus, if the United States cannot have title in space lands under the nonappropriation principle, it cannot have title to the space resources in those lands either. Without title to the resources, the United States cannot bestow such title to its citizens under traditional international property law; by claiming that it can bestow such title, the United States is abrogating Article II of the OST. One could also argue that the in situ resources the Act grants rights in are actually still part of the celestial bodies; thus, the resources are real property prior to their removal, and are off limits under the Treaty.2 19 Given the limited import of the cited examples of state practice (limited quantity and scientific versus large-scale and commercial), the traditional practice of property rights being conferred from a sovereign to a citizen become incredibly compelling and suggest the SREU Act may abrogate the United States' treaty obligations.

A final piece of evidence, however, again inserts ambiguity into the interpretation: the sweeping rejection of the Moon Agreement and its limitations on property rights by the international community discussed supra Part JJJ.A.2. On the one hand, the rejection may imply that the international community approved of property rights. On the other hand, however, there were other reasons for the sweeping rejection. For example, Professors Francis Lyall and Paul B. Larsen claim the "main area of controversy"2 2 0 actually surrounded the Agreement's proclamation of the Moon and celestial bodies and their natural resources as the "common heritage of mankind" in Article 11.1,221 rather than the Agreement's general property-right provisions. Many believed the invocation of the "common heritage of mankind" language would impart actual obligations upon parties to share extracted resources, whereas the "province of all mankind" and "for the benefit and interest of all" language of the OST did not.222 As with ordinary meaning, preparatory materials, and historical context, state practice leaves some ambiguities and state interpretations should also be considered.

5. State Interpretations

Much like the preparatory materials discussed supra Part IV.A.1, subsequent state interpretation of the OST fails to fully address the question of the legality of property rights in space resources. On the one hand, the Senate Committee on Foreign Relations found that the drafters intended Articles I, II, and III of the Treaty to be general in nature when reviewing the Treaty,223 which perhaps suggests Article II's nonappropriation principle does not qualify Article I's general right to use or act as an exception. Yet, the committee also found the Treaty to be in response to the "potential for international competition and conflict in outer space." 2 24 To the committee, Articles I, II, and III stressed the importance of free scientific investigation, guaranteed free access to all areas of celestial bodies, and prohibited claims of sovereignty.225 Not only would property rights in natural resources potentially ignite and exacerbate conflict in space, but they also seemed somewhat incompatible with scientific investigation, free access, and the prohibition on sovereignty. During its hearing on the Treaty, the Senate Committee on Foreign Relations focused a majority of its discussion of Article I on whether or not the language "province of all mankind" imparted strict obligations, while devoting little to no time to the issue of the meaning of "use." 22 6 Former Justice Arthur Goldberg, then U.S. ambassador to the United Nations, did note the goal of the article was to "cnot subject space to exclusive appropriation by any particular power." 227 Nevertheless, this statement fails to resolve whether natural resources may be exploited, as such exploitation could be carried out in an inclusive manner.

The committee's review of Article II consumes only eight lines of the hearing transcript, merely adding that the Article is complementary to Article I and that space cannot be claimed for the country (likely referring to land rather than resources).2 28 A different exchange between Ambassador Goldberg, Senator Lausche, and the Chairman leaves further ambiguity regarding the use of natural resources in space: Mr. Goldberg: We wanted to establish our right to explore and use outer space. Senator Lausche: Yes. That is, any one of the signatory nations shall have the right to the use of whatever might be found in one of the space bodies. Mr. Goldberg: No, no. It doesn't mean that. It means that they shall be free on their own to explore outer space. The Chairman: Or to use it. Mr. Goldberg: To use it. The Chairman: But not on an exclusive basis. Mr. Goldberg: Everyone is free.229

At first, Ambassador Goldberg appears to have refuted the notion that a signatory could simply "use" anything found in one of the space bodies, such as a mineral, implying Senator Lausche's example exceeded the scope of Article I. He then went on to emphasize exploratory activities. But then, Ambassador Goldberg backtracked and reasserted the right to use without clarifying his initial qualification.

This sense of ambiguity remains today despite Congress signing off on the SREU Act. While sponsors of the bill and statements from resource extraction companies emphasized the broad scope of the right to "use" outer space and state practice in support of the legality of 230 property rights, several expert witnesses expressed genuine concern that obligations under the Treaty remain unclear and require additional analysis.231

B. Compatibility

Employing the treaty interpretation tools of ordinary meaning, preparatory materials, historical context, state practice, and state interpretation offers many possible understandings of the obligations imparted by Articles I and II of the OST. For example, while the ordinary meaning of "use" could reasonably include the exploitation of materials, the meeting summaries of the Fifth Session of the U.N. Committee on the Peaceful Uses of Outer Space Legal Sub-Committee make clear that no consensus was ever reached regarding whether "use" includes large-scale exploitation of space resources, let alone fee-simple ownership and the ability to sell commercially. State practice dealing with extraterrestrial samples also sheds little light on the confusion, as the examples cited all deal instead with scientific samples of limited quantity. The international community's rejection of the Moon Agreement also fails to bring clarity. While on the one hand the rejection could be read as a rejection of the idea that the OST prohibits private property rights, it could also be read as a rejection of the common heritage of mankind doctrine. Finally, the prospect of privateventure space mining and extraterrestrial resource extraction remained far off and futuristic at the time of the Treaty's negotiation, making drawing legal conclusions about the legality of these revolutionary activities extremely difficult.

Overall, however, the Treaty's structure and its purposes (preserving peace and avoiding international conflict in outer space) ultimately indicate that private property rights in space resources are prohibited by Article II's non-appropriation principle, at least until future international delegation determines otherwise (like in the Antarctic). The Treaty's structure confirms this interpretation. Article I lays down a general rule for activity in space. Subsequent articles of the Treaty then lay out more specific requirements of and qualifications to this general rule. Much like Article IV restricts the use of nuclear weapons in space, Article II restricts the use of space in ways that might result in potentially controversial property claims. Historically, claims to mineral rights have resulted in just as contentious conflict as those over sovereign lands. Treaty efforts to avoid conflicts in Antarctica and the high seas reflect similar sentiments. The Soviet Union's representative even hinted at this structural relationship between Articles I and II during Treaty S1 232 negotiations.22 In light of the imminent need to ease Cold War tensions, the potential for conflict over property, and the final structure of the Treaty, this Note concludes that the large-scale extraction of space resources is incompatible with the non-appropriation principle of Article II of the OST.23 3 As a result, the United States' provision of property rights to its citizens to possess, own, transport, use, and sell space and asteroid resources extracted through the SREU Act contravenes its international obligations established by the OST.

#### 3] Private entity = majority nonstate

Warners 20 (Bill, JD Candidate, May 2021, at UIC John Marshall Law School) "Patents 254 Miles up: Jurisdictional Issues Onboard the International Space Station." UIC Review of Intellectual Property Law, vol. 19, no. 4, 2020, p. 365-380. HeinOnline.

To satisfy these three necessary requirements for a new patent regime, the ISS IGA must add an additional clause ("Clause 7") in Article 21 specifically establishing a patent regime for private nonstate third parties onboard the ISS. First, Clause 7 would define the term "private entity" as an individual, organization, or business which is primarily privately owned and/or managed by nonstate affiliates. Specifically defining the term "private entity" prevents confusion as to what entities qualify under the agreement and the difference between "public" and "private."99 This definition would also support the connection of Clause 1 in Article 21 to "Article 2 of the Convention Establishing the World Intellectual Property Organization." 100 A succinct definition also alleviates international concerns that the changes to the ISS IGA pushes out Partner State influence. 101 Some in the international community may still point out that Clause 7 still pushes towards a trend of outer space privatization. However, this argument fails to consider that private entities in outer space have operated in space almostas comprehensively as national organizations. 102

#### 4] Outer space means anything above Earth’s Karman line

Dunnett 21 (Oliver Tristan, lecturer in geography at Queen’s University Belfast). Earth, Cosmos and Culture: Geographies of Outer Space in Britain, 1900–2020 (1st ed.). Routledge. 2021. <https://doi.org/10.4324/9780815356301> EE

In such ways, this book argues that Britain became a home to rich discourses of outer space, both feeding from and contributing to iconic achievements in space exploration, while also embracing the cosmos in imaginative and philosophical ways.2

INSERT FOOTNOTE 2

2 This book primarily uses the term ‘outer space’ to describe the realm beyond the Earth’s atmosphere, conventionally accepted as beginning at the Kármán line of 100km above sea level. Other terms such as ‘interplanetary space’, ‘interstellar space’, ‘cosmos’, and ‘the heavens’ are used in specific contexts.

#### They violate—1] global isn’t private – its more which is extra t 2] counter-operations aren’t appropriations 3] its not in space 4] not a legal policy (resolved)

#### Standards:

#### 1] Competitive equity – 3 warrants:

#### A] Ground: they get to pick the topic ex post facto which incentivizes vague argumentation that’s not grounded in a consistent, stable mechanism – they’re playing dodgeball with hand grenades – caselists are concessionary, unpredictable, beaten by perms, and don’t justify their model.

#### B] Limits: their model has no resolutional bound and creates the possibility for literally an infinite number of 1ACs. Not debating the topic allows someone to specialize in one area of the library for 4 years giving them a huge edge over people who switch research focus ever 2 months.

#### C] Causality: debating the resolution forces the affirmative to defend a cause and effect relationship, the state doing x results in y. Non topical affs establish their own barometer “I think x is good for me” that aren’t negatable – that independently decks clash cuz there’s no way for me to engage with the affirmative.

#### 2] topical version of the aff solves – they can read their advantages in the context of the res since most of their authors agree appropriation is capitalist

#### 3] Vote negative – A] this procedurally evaluates whether their model is good, which is a prior question B] they can’t get offense: we don’t exclude them, only persuade you that our methodology is best. Every debate requires a winner and loser, so voting negative doesn’t reject them from debate, it just says they should make a better argument next time.

## OFF

#### Your ev generates the link to the mining disad, but also says there are checks on environmental consequences which answers any 1ar offense.

Mezzadra, S., & Neilson, B. (2013). Extraction, logistics, finance: Global crisis and the politics of operations. Radical Philosophy, 8-18. Recut – CSUF JmB // sam recut

Now that the global crisis of capitalism is entering its fifth year, it is possible to discern the contours of its unfolding. No New Deal or world war is emerging to save the day. The ritual purification of austerity has not cleansed the global sewer of finance despite the harsh and unequal punishments it has delivered. From the fall of Lehman Brothers to the protests in Syntagma Square, from the stalled development in Indian ‘new towns’ to the refusal of migrant workers to return to non-existent jobs in China’s production belts or the Gulf states, the elusive temporality of the crisis does not deliver the sense of an ending. In its classical meaning, the notion of crisis sets the stage for a decision. [1] What seems to be at stake at the present time is not decision as such but rather the indefinite prolongation of the time in which any decision might be made. The rhetoric surrounding austerity programmes is an example in this regard. Austerity is never enough. The myriad decisions it involves seem an expansion of micromanagement practices to ever-higher scales of governance, testing the rationality and flexibility of governance to the point that its boundary with sovereignty is blurred. Meanwhile the roots of the current economic and social turbulence remain unaddressed. The defining logics of contemporary capitalism – from the pervasiveness of debt to financialization, from the precarization of work to the penetration of entrepreneurial rationality into the institutional management of welfare and migration – are far from being challenged. On the contrary, they are being intensified and entrenched. In this article we highlight some of the main aspects of these logics, examining the intersection of finance, extraction and logistics. These three sectors of economic activity play a central role in shaping contemporary capitalism and therefore are important sites for the analysis of more general tendencies in its development. Global operations These tendencies are shifting the analytical as well as the political ground on which the crisis is being addressed. If we think about the ‘flash crash’ of 6 May 2010, for example – when the Dow Jones Industrial Average plunged by around a thousand points within minutes and then recovered equally quickly – we understand something about the peculiar temporal scrambling of crisis and recovery that permeates financial capital markets in an age of algorithmic trading and fiscal cliffs. This pattern of volatility has not only become a defining feature of finance; it also signals the acceleration and deepening of processes that disseminate uncertainty into the time and fabric of social life. The very idea of a ‘recovery’ seems to be shattered when the rationality of capitalism is dominated by financial instability and the attempt to make it productive. [2] When the history of these shifts is written, it is likely that they will appear as neither linear nor cyclical because the temporality of finance, distinctly oriented to the future, exists in discrepant and arrhythmic relation not only within itself but also to the temporalities of other economic and social orders. The struggles and revolts born of the social unsustainability of the crisis and its austere response will doubtless inform this historiography. We turn to these struggles and revolts to situate the continued stakes of subjectivity involved in the operations of capital, in its networks, assemblages, codes and algorithms. In our forthcoming book, Border as Method, or, the Multiplication of Labor, 3 we argue that borders remain central to the heterogeneous organization of space and time under global capital. Understanding the border in a wide sense, by no means limited to the conventional geopolitical line, including for instance urban divides and the limits surrounding ‘special economic zones’, provides a means of grasping the changing composition and diversification of labour. Although in this book migration and border struggles are the focus, the approach we develop to issues of accumulation, dispossession and exploitation has a more general field of application. The current proliferation of borders appears as intimately related to the expansion of what we call the ‘frontiers of capital’. This term, used by the anthropologists Melissa S. Fisher and Greg Downey, [4] registers capital’s drive to continuously open up new territories (in both the literal and the figurative sense) to re-establish the conditions for accumulation. It is precisely this moment of ‘opening up’ that interrupts the linear temporality of transition or development and calls for the repetition of ‘so-called’ primitive or originary accumulation, [5] challenging existing boundaries and disrupting established social relationships. Such an opening cannot be separated from new bordering processes, from the differentiating and hierarchizing effects of borders, and from the articulation of heterogeneous spaces and regimes that borders facilitate. A political analysis of the global crisis and the struggles that have emerged within it must take account of the unevenness and patchwork character of its effects and dynamics. Among the tendencies underlying the crisis are the shattering of old spatial hierarchies, the reshuffling of geographies of development, and the emergence of new regionalisms and patterns of multilateralism. In many parts of the world, in China no less than in Latin America, official rhetoric presented the crisis as an historical ‘opportunity’, at least until it had to confront the ‘reality check’ of slowing growth rates, impending real-estate crisis, monetary turmoil and mounting social struggles. The ‘Arab Spring’, the indignados and the Occupy movement have dominated headlines across the North Atlantic and Middle East. But it is important not to forget the resistance of peasants and indigenous groups against dispossession of land in the wake of the spread of soy, palm oil, shrimp farming, mining, industrial development and ‘new towns’. Equally we must remember the resistance of the poor against the economies of urban extraction surrounding slums and the many struggles, both spontaneous and organized, which have sprung up in the world’s factories and sweatshops over the past five years. If these dispersed and often localized struggles lack the iconic status of Zuccotti Park or the Kasr Al Nile Bridge in Cairo, they nonetheless supply important coordinates on the map from which we can begin to read the spatial economy of the crisis. Needless to say, this is an economy of shifting scales and proliferating borders. New kinds of ‘global territory’ such as free zones and corridors are springing up. [6] Meanwhile, as anthropologist Anna Tsing argues, the presence of ‘nonscalable’ elements, such as resource patches that cannot be torn from their locations, means that capital must continue to wind in and out of scalable relations. [7] For over thirty years Deleuze and Guattari’s trope of ‘deterritorialization’ has been central to critical discussions of global space and its capitalist axiomatic. Recently, however, there has emerged a tendency to focus attention once again on the question of territory. [8] As understood in these discussions, territory is not necessarily or not only associated with the sovereign space of the state. Rather, it is seen as a political technology for organizing social and economic relations that has both spatial and non-spatial elements. We want not so much to participate in this return to territory as to ask, of what it is symptomatic? Clearly financialization is relevant here. There is a materiality of finance that escapes attempts to describe it with abstract metaphors such as flows and volatility. The global city and the offshore banking zone are two very obvious instances of how finance hits the ground. But it is also possible to foreground some less obvious cases of finance’s entanglement with territory which begin to expose the limits of financialization as a self-sustaining movement. One has only to consider the strategic link between financial capital and global economies of extraction to understand how the political technology of territory is no longer driven solely by sovereign imperatives. The legal unity of territory is challenged and exploded by not only the multiplication of resource extraction ‘enclaves’ [9] but also the proliferation of partial legal regimes, technical standards, ‘best practices’ and sectorally limited normative arrangements. [10] In the mining industry, the relations of transnational companies with indigenous and other local populations are filtered by protocols of corporate responsibility that stipulate the parameters within which the place-bound business of mineral extraction can deal with environmental, cultural and even religious contestations. This is often not sufficient to eliminate the production of violent struggles on the ground, but it means that corporate entities have to enter into unstable alliances and often negotiations with public institutions and other actors to adapt to contingencies to enable the resource extraction to go ahead. Power is not merely channelled into territory from above but assembled in haphazard and often enduring ways. A prevalent means of theorizing such power relations draws on network models that emphasize non-totalizing and relational aspects of the social.We are not without sympathy for these network and assemblage approaches that insist upon tracing the multiple and shifting relations that compose any social entity or form. [11] But we are wary when such approaches are marshalled in ways that deny analytical validity to the category of capital. It does not take much to realize that capital itself functions in processual ways. Capital is not a thing but ‘a social relation between persons which is mediated by things’. [12] Speaking of the continuous repetition of ‘so-called primitive accumulation’ leads us to posit the question of the production of the subjects that enter into the social relation that capital is. The production of subjectivity is a terrain of struggle in the actual workings of capitalism. Fear of falling into the subject–object relationship tends to ~~blind~~ [distract] some network and assemblage theorists to these dynamics. The subject disappears, to be replaced by the actor or the agent, and the interplay of material forces that make assemblages and networks productive tends to be overlooked. The object emerges as the ontological orientation of the moment and the rupture of social relations and established forms of subjectivity connected with the operations of capital are obscured by a logic that turns the subject into just another thing. However, the reproduction of capital as a social relation is predicated upon profound, violent and contested dynamics that reshape the subjectivity of the dominated and exploited. Fundamental dissymmetry and antagonism are factors in the material constitution of any network or assemblage. Attention to the subjectivity of labour is crucial in this regard. Stefano Harney has described recent developments of network and assemblage theory as a ‘becoming logistical of philosophy’. [13] Such theoretical approaches have come to the fore at precisely the moment in which capital’s building of global connections has assumed a new salience. What Marx called the mediation of social relations ‘by things’ is nowadays the object of the flourishing management science of logistics. Seeking to introduce efficiencies into transport and communication practices, logistics involves the algorithmic coordination of productive processes in space and time. Recognizing the increasing role of logistics in the organization of global circuits of accumulation need not lead to being hypnotized by its magic of connecting and generating networks. Assembly and supply chains provide a strategic empirical focus for studies that seek to unearth the unbalanced and contentious relations that animate networked processes of production and the logistical operations that sustain them. However, gleaning logistics handbooks and exploring the software codes that drive logistical transactions do not supply a ready-made theoretical framework for the political interpretation of the operations at stake. We do not know what an operation can do, we might ironically say. Producing such a theoretical framework is one of the most urgent intellectual tasks of the day. Tales of extraction Let us move to an example that lays bare the relation between extraction, finance and logistics. Australia is a nation whose government likes to boast that it managed to avoid the worst of the global economic crisis due to its fiscal policies and booming export of primary materials, primarily to China. Now that resource commodity prices are falling with the slowdown in China, there is a search for new mineral wealth that might sustain the economy in the uncertain times ahead. Among the most hyped of the new resource commodities are so-called ‘rare earth’ elements, such as Europium and Lanthanam. The Mount Weld mine, near Laverton in Western Australia, is a rich source for these minerals, which are used in the miniaturization of components for electronic goods and as phosphors to create colour in television, computer and mobile phone screens. [14] Although rare earth elements are relatively abundant in the earth’s crust, they are rarely present in economic concentrations. They do not occur as free metals but as part of an ore that is always found alongside the radioactive elements uranium and thorium. This means that the process of separating rare earth elements for commercial use involves the production of radioactive tailings. Unsurprisingly, the disposal of this radio active waste poses a threat to the long-term well-being of populations that live in the vicinity of sites where such operations are carried out. But the economic incentives for the extraction and processing of rare earth elements are high. Given their essential role in the hardware that enables contemporary forms of digital capitalism, demand for these minerals is unlikely to decrease. Indeed there has been much public discussion, particularly in the United States, about a forecast shortage of these rare earth minerals. While China has been a major supplier, internal demand and price-setting manipulations have led to a decrease in Chinese exports. In 2011 a global supply deficiency of rare earth minerals led to a massive price hike, leaving manufacturers along the supply chains for computers and other electronic goods with depleted inventories. This price rise, amid the general downturn in the resource commodities market, is one reason why Lynas Corporation, the owners of the Mount Weld mine, have pushed aggressively to complete the construction of an Advanced Minerals Plant for the processing of rare earth elements near the port of Kuantan in Pahang, Malaysia. We can see here the emergence of a tight series of relations between extraction, logistics and financialization within the ruptured time and space of the global crisis. The financial manipulation of the rare earth commodity price drives new processes of mineral extraction. In turn, there is a need for the logistical coordination of the rare earth supply chain, which in turn feeds into the supply chain for electronic goods, between Australia and Malaysia. Areas such as Pahang set themselves up as logistics hubs, placing themselves on the map of global production by building tight networks of transport and communication between modern port facilities and special economic zones where the dangerous business of processing the rare earth elements, as well as their efficient transfer to electronics manufacturing facilities, can be accomplished. But, as we shall see, these processes of logistical coordination also place Pahang on the map of global struggles. The building of the Lynas Advanced Minerals Plant in the Gebeng Industrial Estate near Kuantan has prompted myriad social conflicts, especially in the wake of a Malaysian High Court decision allowing the import of rare earths and their processing to go ahead. Protestors have conducted a 300-kilometre walk between Kuantan and Kuala Lumpur, staging a rally of 20,000 people in the capital city at the end of this journey. Furthermore, the resonances of the Stop Lynas campaign have spread across the Asian region, with solidarity movements operating in Australia and Taiwan. In this instance, as in the others we will discuss shortly, the cocktail of extraction, logistics and financialization gives rise to social antagonism within the networked systems of global capitalist production. Such conflict has been pronounced in Latin America, where the intensification of economies of extraction has been central to the development of capitalism in recent years. Mapping the global landscape of extraction confronts us with a wide array of peculiarities and changing economic as well as political circumstances. What makes the Latin American instance particularly instructive is the connection between the stretching and intensification of extractive dynamics and the presence of a series of ‘progressive’ governments that have associated these dynamics with the need to use resources for new social policies that address the needs of the most vulnerable and poor sectors of society. While this has prompted the continuity of a developmental pattern rooted in the colonial history of the region, according to which ‘progress’ is only accessible through the ‘selling of natural resources’, some major shifts have occurred. Argentina, once ‘the world’s granary’, is today a major exporter of commodities (soy and minerals). Ecuador has moved from cocoa to oil as its main economic resource. Bolivia, in the past a global hub for the extraction of silver and tin, is today primarily exporting natural gas. [15] Perhaps more importantly, the prominence of indigenous movements and struggles in the multifarious contestations of neoliberalism that laid the basis for the formation of ‘progressive’ governments in several Latin American countries is reflected in the acknowledgement of the principle of buen vivir (‘living well’) in the new constitutions of Ecuador (2008) and Bolivia (2009). This is only the most visible sign of the influence of discourses of ‘postdevelopment’ in contemporary Latin America. In such a situation, the recent radicalization of extractive tendencies can be seen as a kind of detachment of the imperatives of ‘development’ from the principle of buen vivir, which had been widely understood (not only within indigenous movements) as a critical spur to the search for alternatives. [16] One has only to think of recent conflicts surrounding the cultivation of soy in the north-western Argentine province of Santiago del Estero or the extraction of oil in the Peruvian Amazon to get a sense of the violence and processes of dispossession at stake here. At the same time there is a need to stress that the nature of the political conjuncture in Latin America opens up spaces of legitimacy and recognition for struggles against extraction and the contestation of big ‘developmental’ and infrastructural projects. New alliances and convergences are in the making, connecting remote sites in the country or the forest with metropolitan spaces and articulating resistance on transnational scales. The state itself, whose ‘return’ is celebrated by the official rhetoric of ‘progressive’ governments, [17] has recuperated old tasks it had been stripped of in the age of the ‘Washington Consensus’ and developed new institutional capacities of regulation and even, in certain cases, of distribution. But as one of the keenest critical analysts of extraction in the region has maintained, the return of the state as regulator installs itself within a space of variable geometry, which means within a multi-actor scheme (marked by a complexification of civil society through social movements, NGOs and other actors), but at the same time in tight association with multinational private capitals, whose weight in national economies is growing more and more. [18] All these tendencies are clear both in the case of extraction in the narrow sense of the word and in instances of the expansion of the frontiers of capital correlated with more elusive but no less intrusive means of extraction. In the case of the attempt to open up favelas and slums to the combined intervention of finance capital and real-estate investment, particularly evident for instance in Rio de Janeiro on the eve of the 2014 World Cup and the 2016 Olympics, the resistance to the ‘removal’ of the poor can mobilize the political legitimacy acquired in the years of the Lula governments and the social power manifest in an unprecedented access to consumer opportunities. It can also play within and against the ‘space of variable geometry’, to recall Svampa’s phrase, in which the state is enmeshed. [19] Nevertheless it is necessary to emphasize that this space is also a space of capital. Finance, in particular, is not only involved in this dense materiality of struggle in so far as its role is pivotal to the ‘valorization’ of urban spaces inhabited by the poor. A boom of consumer credit is already evident in several Latin American countries as a trend accompanying social policies that do not seem to point towards a diminution of the high degrees of informality and precarity that shape working lives. In the case of the subprime crisis of 2007–08 in the USA we became aware, Saskia Sassen writes, that ‘the financial sector invented some of its most complicated financial instruments to extract the meager savings of modest households in order to produce an “asset” – the mortgage on a house.’ [20] It is likely that the 2 billion modest-income households worldwide charted by Sassen will constitute ‘one of the new global frontiers for finance’ [21] and that subprime mortgages and other technical innovations will spur the extractive dimension of finance worldwide. The apparatus of student debt is another of these frontiers. [22] Does this mean that the global crisis will merely create the conditions for the global extension of the same trends that have been widely recognized as its trigger? And, as far as Latin America is concerned, will ‘post-neoliberalism’ simply coincide with the age of a ‘disciplinary democracy’, [23] with an internalization of the economy of debt and a synchronization of the return of the state with the new pace and needs of capitalist accumulation? While we need to stress these elements of continuity and the ongoing pressure of capital, we must also be attentive to the continuous if fragmented generation of struggles, which are particularly intense on the frontiers of its expansion. Differential accumulation Given their pervasiveness and prevalence in the global present, extraction, logistics and finance provide strategic points of focus. Finance permeates the rationality of capitalism as a whole, linking abstract processes of control and manipulation to changing forms of production, to the life of entire populations, and to the formalization of anthropological relations into monetary standards and conventions. Extraction provides the raw materials that drive capital’s creative destruction, whether it involves mining, land grabbing, extensive cultivation of cash crops, gentrification of urban neighbourhoods, or the continuous pressure placed on human activity and life to transform it into a source of value. Logistics is the art and science of building networked relations in ways that promote transport, communication and economic efficiencies. Stemming from military practices, it organizes capital in technical ways that aim to make every step of its ‘turnover’ productive.

#### Asteroid mining is an unqualified good – it’s essential to advanced asteroid deflection, deep space travel, and fighting climate change

Heise 18 -- Jack Heise (Judicial Law Clerk at U.S. Courts of Appeals), Space, the Final Frontier of Enterprise: Incentivizing Asteroid Mining Under a Revised International Framework, 40 Mich. J. Int'l L. 189 (2018). https://repository.law.umich.edu/mjil/vol40/iss1/5 WJ

Asteroid mining has the potential to facilitate space travel, an outcome the OST holds to be in the interest of humanity as a whole.39 The potential of asteroid mining to reduce the cost of spaceflight, moreover, could facilitate the growth of the space economy. Asteroid mining thus aligns with another stated purposes of the OST in the sense that an expanded space econ- omy could provide substantial benefits to all mankind.40 First, in seeking to face the challenges posed by space travel, the public sector space race gave rise to numerous technological innovations, ranging from LEDs to emergency blankets to memory foam.41 It seems likely that the private space race would result in a similar degree of innovation, the products of which could benefit people across the globe.

Second, a successful mission to Mars could provide benefits beyond a mere sense of interplanetary accomplishment. NASA suggests that, given the parallels between the formation and evolution of Mars and Earth, a voyage there could help “us learn more about our own planet’s history and future.”42 The scientific advancements from such a mission cannot currently be anticipated and are difficult to predict, but “expand[ing] the frontiers of knowledge” in this manner could well bring benefits to all mankind.43

Third, the development of asteroid mining technology could also help advance asteroid diversion tactics. The development of the technology required to conduct successful asteroid mining operations could “help us to divert any incoming asteroids.”44 This is of great importance since NASA recently eliminated its Asteroid Redirect Mission due to funding cuts;45 NASA’s project was hailed by some scientists as a “critical step in demonstrating we can protect our planet from a future asteroid impact . . . .”46 Asteroid mining could step in and fill an important void. While the probability of an Armageddon-causing impact is low, the effects of an impact would be extremely severe.47 Even some mitigation of this risk as a byproduct of as- teroid mining would be a benefit to humanity as a whole.

Finally, reduced launch costs could facilitate measures to combat global climate change. One proposed solution for canceling out predicted increases in average worldwide temperature is to “prevent[] . . . about 1% of incoming solar radiation—insolation—from reaching the Earth. This could be done by scattering into space from the vicinity of Earth an appropriately small frac- tion of total insolation.”48 Asteroid mining could facilitate such measures in that “[t]echnologies that could greatly decrease the cost of space-launch could make a telling difference in the practicality of all types of space- deployed scattering systems of scales appropriate to insolation modulation.”49 There are certainly intermediate measures to combat climate change that ought to be taken first, but asteroid mining would facilitate this expedited solution. While some of the benefits of asteroid mining would doubtless accrue primarily to those nations with asteroid mining companies within their borders, the benefits noted in this section—space exploration as a gen- eral proposition, technological and scientific development, improvement of asteroid diversion technology, and facilitated means of swiftly countering climate change—would inure substantially to the benefit of all mankind.

#### Warming causes extinction

Yangyang Xu 17, Assistant Professor of Atmospheric Sciences at Texas A&M University; and Veerabhadran Ramanathan, Distinguished Professor of Atmospheric and Climate Sciences at the Scripps Institution of Oceanography, University of California, San Diego, 9/26/17, “Well below 2 °C: Mitigation strategies for avoiding dangerous to catastrophic climate changes,” Proceedings of the National Academy of Sciences of the United States of America, Vol. 114, No. 39, p. 10315-10323

We are proposing the following extension to the DAI risk categorization: warming greater than 1.5 °C as “dangerous”; warming greater than 3 °C as “catastrophic?”; and warming in excess of 5 °C as “unknown??,” with the understanding that changes of this magnitude, not experienced in the last 20+ million years, pose existential threats to a majority of the population. The question mark denotes the subjective nature of our deduction and the fact that catastrophe can strike at even lower warming levels. The justifications for the proposed extension to risk categorization are given below.

From the IPCC burning embers diagram and from the language of the Paris Agreement, we infer that the DAI begins at warming greater than 1.5 °C. Our criteria for extending the risk category beyond DAI include the potential risks of climate change to the physical climate system, the ecosystem, human health, and species extinction. Let us first consider the category of catastrophic (3 to 5 °C warming). The first major concern is the issue of tipping points. Several studies (48, 49) have concluded that 3 to 5 °C global warming is likely to be the threshold for tipping points such as the collapse of the western Antarctic ice sheet, shutdown of deep water circulation in the North Atlantic, dieback of Amazon rainforests as well as boreal forests, and collapse of the West African monsoon, among others. While natural scientists refer to these as abrupt and irreversible climate changes, economists refer to them as catastrophic events (49).

Warming of such magnitudes also has catastrophic human health effects. Many recent studies (50, 51) have focused on the direct influence of extreme events such as heat waves on public health by evaluating exposure to heat stress and hyperthermia. It has been estimated that the likelihood of extreme events (defined as 3-sigma events), including heat waves, has increased 10-fold in the recent decades (52). Human beings are extremely sensitive to heat stress. For example, the 2013 European heat wave led to about 70,000 premature mortalities (53). The major finding of a recent study (51) is that, currently, about 13.6% of land area with a population of 30.6% is exposed to deadly heat. The authors of that study defined deadly heat as exceeding a threshold of temperature as well as humidity. The thresholds were determined from numerous heat wave events and data for mortalities attributed to heat waves. According to this study, a 2 °C warming would double the land area subject to deadly heat and expose 48% of the population. A 4 °C warming by 2100 would subject 47% of the land area and almost 74% of the world population to deadly heat, which could pose existential risks to humans and mammals alike unless massive adaptation measures are implemented, such as providing air conditioning to the entire population or a massive relocation of most of the population to safer climates.

Climate risks can vary markedly depending on the socioeconomic status and culture of the population, and so we must take up the question of “dangerous to whom?” (54). Our discussion in this study is focused more on people and not on the ecosystem, and even with this limited scope, there are multitudes of categories of people. We will focus on the poorest 3 billion people living mostly in tropical rural areas, who are still relying on 18th-century technologies for meeting basic needs such as cooking and heating. Their contribution to CO2 pollution is roughly 5% compared with the 50% contribution by the wealthiest 1 billion (55). This bottom 3 billion population comprises mostly subsistent farmers, whose livelihood will be severely impacted, if not destroyed, with a one- to five-year megadrought, heat waves, or heavy floods; for those among the bottom 3 billion of the world’s population who are living in coastal areas, a 1- to 2-m rise in sea level (likely with a warming in excess of 3 °C) poses existential threat if they do not relocate or migrate. It has been estimated that several hundred million people would be subject to famine with warming in excess of 4 °C (54). However, there has essentially been no discussion on warming beyond 5 °C.

Climate change-induced species extinction is one major concern with warming of such large magnitudes (>5 °C). The current rate of loss of species is ∼1,000-fold the historical rate, due largely to habitat destruction. At this rate, about 25% of species are in danger of extinction in the coming decades (56). Global warming of 6 °C or more (accompanied by increase in ocean acidity due to increased CO2) can act as a major force multiplier and expose as much as 90% of species to the dangers of extinction (57).

The bodily harms combined with climate change-forced species destruction, biodiversity loss, and threats to water and food security, as summarized recently (58), motivated us to categorize warming beyond 5 °C as unknown??, implying the possibility of existential threats. Fig. 2 displays these three risk categorizations (vertical dashed lines).

## Case

### Overview

#### 1] Private actor fiat is a voting issue — skews 1nc strategy and kills neg ground by allowing the aff to rely on utopian fiat to avoid link turns and solvency deficits to the plan, while still avoiding the link to the K — turns critical education — proves their model is just abstract theorizing

#### 2] This aff is a list of postmodern buzzwords without any scenario analysis – if we need a reason why private appropriation of space is good, we will auto-win this debate because they have not read a reason why it is bad.

#### 3] Double turn – their understanding of technocratic development by the Genovese def can’t be solved by the alt but critiques that form of performativity

\*Their mezzadra and neilson ev (2 different parts of the card)

While a focus on the performative aspects of the operation obscures the moment of connection, disconnection and friction generated through the articulation with its ‘outside’, a focus on its outcome does not shed light on the complex materiality of the operation, on the internal as well as external conditions of its effectiveness.

It thus makes sense to speak of a politics of the operation, taking into account both its structuring effect on human relations and the ways in which work, labour and action are combined both in the execution of specific tasks and in the articulation of different subjects that make operations possible. What

### XT First

#### 1] Extinction is a distinct phenomena which is offense under ANY fw

Burke et al 16 Associate Professor of International and Political Studies @ UNSW, Australia, 2016 (Anthony, Stefanie Fishel is Assistant Professor, Department of Gender and Race Studies at the University of Alabama, Audra Mitchell is CIGI Chair in Global Governance and Ethics at the Balsillie School of International Affairs, Simon Dalby is CIGI Chair in the Political Economy of Climate Change at the Balsillie School of International Affairs, and, Daniel J. Levine is Assistant Professor of Political Science at the University of Alabama, “Planet Politics: Manifesto from the End of IR,” Millennium: Journal of International Studies 1–25)

8. Global ethics must respond to mass extinction. In late 2014, the Worldwide Fund for Nature reported a startling statistic: according to their global study, 52% of species had gone extinct between 1970 and 2010.60 This is not news: for three decades, conservation biologists have been warning of a ‘sixth mass extinction’, which, by definition, could eliminate more than three quarters of currently existing life forms in just a few centuries.61 In other words, it could threaten the practical possibility of the survival of earthly life. Mass extinction is not simply extinction (or death) writ large: **it is a qualitatively different phenomena that demands its own ethical categories.** It cannot be grasped by aggregating species extinctions, let alone the deaths of individual organisms. Not only does it erase diverse, irreplaceable life forms, their **unique histories** and **open-ended possibilities**, but it **threatens the ontological conditions of Earthly life**.

IR is one of few disciplines that is explicitly devoted to the pursuit of survival, yet it has almost nothing to say in the face of a possible mass extinction event.62 It utterly lacks the conceptual and ethical frameworks necessary to foster diverse, meaningful responses to this phenomenon. As mentioned above, Cold-War era concepts such as ‘nuclear winter’ and ‘omnicide’ gesture towards harms massive in their scale and moral horror. However, they are asymptotic: they imagine nightmares of a severely denuded planet, yet they do not contemplate the **comprehensive negation** that a mass extinction event entails. In contemporary IR discourses, where it appears at all, extinction is treated as a problem of scientific management and biopolitical control aimed at securing existing human lifestyles.63 Once again, this approach fails to recognise the reality of extinction, which is a **matter of being and nonbeing**, not one of life and death processes.

Confronting the enormity of a possible mass extinction event requires a total overhaul of human perceptions of what is at stake in the disruption of the conditions of Earthly life. The question of what is ‘lost’ in extinction has, since the inception of the concept of ‘conservation’, been addressed in terms of financial cost and economic liabilities.64 Beyond reducing life to forms to capital, currencies and financial instruments, the dominant neoliberal political economy of conservation imposes a homogenising, Western secular worldview on a planetary phenomenon. Yet the **enormity, complexity, and scale** of mass extinction is so huge that humans need to **draw on every possible resource in order to find ways of responding**. This means that they need to mobilise multiple worldviews and lifeways – including those emerging from indigenous and marginalised cosmologies. Above all, it is crucial and urgent to realise that extinction is a **matter of global ethics**. It is not simply an issue of management or security, or even of particular visions of the good life. Instead, it is about staking a claim as to the goodness of life itself. If it does not fit within the existing parameters of global ethics, then it is these boundaries that need to change.

9. An Earth-worldly politics. Humans are worldly – that is, we are fundamentally worldforming and embedded in multiple worlds that traverse the Earth. However, the Earth is not ‘our’ world, as the grand theories of IR, and some accounts of the Anthropocene have it – an object and possession to be appropriated, circumnavigated, instrumentalised and englobed.65 Rather, it is a complex of worlds that we share, co-constitute, create, destroy and inhabit with countless other life forms and beings.

The formation of the Anthropocene reflects a particular type of worlding, one in which the Earth is treated as raw material for the creation of a world tailored to human needs. Heidegger famously framed ‘earth’ and ‘world’ as two countervailing, conflicting forces that constrain and shape one another. We contend that existing political, economic and social conditions have pushed human worlding so far to one extreme that it has become almost entirely detached from the conditions of the Earth. Planet Politics calls, instead, for a mode of worlding that is responsive to, and grounded in, the Earth. One of these ways of being Earth-worldly is to embrace the condition of being entangled. We can interpret this term in the way that Heidegger66 did, as the condition of being mired in everyday human concerns, worries, and anxiety, to prolong existence. But, in contrast, we can and should reframe it as authors like Karen Barad67 and Donna Haraway68 have done. To them and many others, ‘entanglement’ is a radical, indeed fundamental condition of being-with, or, as Jean-Luc Nancy puts it, ‘being singular plural’.69 This means that no being is truly autonomous or separate, whether at the scale of international politics or of quantum physics. World itself is singular plural: what humans tend to refer to as ‘the’ world is actually a multiplicity of worlds at various scales that intersect, overlap, conflict, emerge as they surge across the Earth. World emerges from the poetics of existence, the collision of energy and matter, the tumult of agencies, the fusion and diffusion of bonds.

Worlds erupt from, and consist in, the intersection of **diverse forms of being** – material and intangible, organic and inorganic, ‘living’ and ‘nonliving’. Because of the tumultuousness of the Earth with which they are entangled, ‘**worlds’ are not static, rigid or permanent. They are permeable and fluid**. They can be **created**, **modified** – and, of course, destroyed. Concepts of violence, harm and (in)security that focus only on humans ignore at their peril the destruction and severance of worlds,70 **which undermines the conditions of plurality that enables life on Earth to thrive.**

#### 2] Magnitude/future generations – turns any of their harm impacts since the impact of global death would also affect any future generations

#### 3] Pre-req – in order to engage in counter-operations or to invest in a structure that hurts cap we need to be alive

#### 4] Moral uncertainty – we can’t be sure that racial cap constrains all forms of violence nor that util does but extinction would kills us all anyways

#### 5] No framing in the 1AC means you default neg and don’t allow new 1AR contextualization since they allow the aff to shift out of their offense which affects all 1nc strat

### FW

#### FW: The 1AC must tangibly and causally demonstrate HOW they AFFECT the success of global counter operation. This is the minimum condition for NOT immediately voting negative on presumption.

#### Burden of Proof- The 1AC has to defend a positive change from the status quo and their evidence concedes that these operations exist. What does the 1AC do is the operative question?

#### Their OWN ev says so. 1AC Mezzadra and Nielsen says quote “the operation is effectual rather than performative, the sense in which it is productive of something other than itself.”

#### Orientation fails- Focus on orientation, language, consciousness, culture, and ethics is a self-fulfilling prophecy that affirms futile resistance and trades off with real activism.

**Smith 19** (Shawn Nicholas Smith has a Doctorate in Philosophy from the University of Texas, Austin. “BLACK ECONOMIC EMPOWERMENT: BOOKER T. WASHINGTON AND RHETORICAL INTERVENTION IN MARKETS”. May 2019)

The Federal Reserve and the monetary policy surrounding it demonstrate how private interest is an integral part of the U.S. economy, monetary policy, and government. For this reason, **it is imprudent to suggest that neoliberalism**, the takeover of public modes of operation with privatization, **is a new phenomenon.** Rather, the very logic of European capitalist governments carries within it the incipient prioritized monetary motive. The market motive, when prioritized, bends the fabric of society toward the pursuit of profit and away from the common good.86 As I have shown in this chapter, the European capitalist state began thwarting opportunities for a common humanity prior to the Trans-Atlantic Slave Trade first with the enslavement of Europeans, then Africans. As such, the marriage of the public and the private did not begin in 1970, but instead has its origins in the fifth century with the fall of the Western Holy Roman Empire.87 To mistake this fact is also to mislabel the necessary actions of neoliberal resistance in the current era. Giroux is wrong: **modern resistance movements like Occupy and The Battle in Seattle did little to jeopardize the neoliberal scene**.88 In fact, the very problems of neoliberal state society have hastened, not slowed, in the last two decades.89 **When we misidentify the root problem of the neoliberal scene, we mischaracterize traditional protest and resistance as viable solutions** to the neoliberal conundrum and omit other useful strategies, particularly those that involve the very markets we wish to resist. Conclusion The above history I have provided is long and deep. This **history highlights both the limitations of contemporary neoliberal criticism and represents a pragmatic rhetorical tradition defined by an evolutionary model of ideation.** Deep within the unfolding of time from the Middle Ages to the present, we have seen how Europe was seduced by a capitalist psychosis following from a basic Orientation of Markets. Importantly, we have also seen how the perversion of capital is not merely a symptom of the state but is instead an offspring of the state as modern governments, infected with the habits of desperate feudal merchants, became the first corporations. Every orientation comes with it a certain training that teaches us how and what tools to select in order to deal with our challenges. **In some ways, orientation is the source of our problems** and solutions. That is, problems and their solutions are made possible when we view experience from a unique ontological and epistemological standpoint. As Burke writes, One’s ideas of relationship obviously have a great deal to do with the selection of means under such circumstances. Savages could make fires by considering dry wood and friction as appropriate linkages in the process of fire-making.”90 **Orientations can cause us to make inefficient connections between events and therefore draw ineffective conclusions** as in the tribe person who, believing the missionary wore the rain coat to bring rain instead of shield against rain, asked the missionary to wear the rain coat to protect against drought. This demonstrates a “faulty selection of means due to a faulty theory of causal relationships.”91 Similarly, the Orientation of Markets transforms humans into agents of markets. Rather than maintain money and markets as abstractions designed to serve human needs, the Orientation of Markets and the subsequent capitalist psychosis configures humans in market terms. They can either be owner or owned by markets, or sometimes both at the same time, but there is seldom room to be anything else. Such a psychosis, the corresponding social structure that follows from an Orientation of Markets has been the mainstay of society for over 1000 years. Race helped to jumpstart capitalism and continues to be a site for the investigation of the transformation of capital. So, **what is the way out and forward**? **The central escape from a corporate governmentality** and ascendant logic **of** race and **capital requires various forms of pragmatic force.** As James Baldwin writes, Black folks must use any available means of persuasion in order to turn the tides of oppression. Indeed, for Baldwin, troubling the pious linkages surrounding Black folks are the key in transforming national, international and governmental consciousness. Interrupting the pious association of the terms “Europe” and “Civilization,” Baldwin imagines nationhood and governmentality absent a Euro-centric logic: This is because White Americans have supposed ‘Europe’ and ‘civilization’ to be synonyms which they are not –and have been distrustful of other standards and other sources of vitality, especially those produced in America itself…What it comes to is that if we, who can scarcely be considered a White nation, persist in thinking of ourselves as one, we condemn ourselves with the truly White nations, to sterility and decay, whereas if we could accept ourselves as we are, we might bring new life to the Western achievements and transform them. The price of this transformation is the unconditional freedom of the Negro.92

### Presumption

#### They can’t solve public space operations. Their evidence is about repurposing technology but they have no description for what that means or how they get NASA’s tech.

#### Counteroperations fail. They get crushed by backlash which matters since they conceded these operations are only valuable if they are SUCCESSFUL. How do they beat NewSpace?

### Cap Good

#### 1] Tech innovation undergirded by profit motives are driving the Second Machine Age, which dematerializes capitalism and makes growth a sustainable necessity.

McAfee 19—cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management, former professor at Harvard Business School and fellow at Harvard’s Berkman Center for Internet and Society (Andrew, “Looking Ahead: The World Cleanses Itself This Way,” *More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources—and What Happens Next*, Chapter 14, pg 278-292, Kindle, dml)

The decreases in resource use, pollution, and other exploitations of the earth cataloged in the preceding chapters are great news. But are they going to last? It could be that we're just living in a pleasant interlude between the Industrial Era and another rapacious period during which we massively increase our footprint on our planet and eventually cause a giant Malthusian crash. It could be, but I don't think so. Instead, I think we're going to take better care of our planet from now on. I'm confident that the Second Machine Age will mark the time in our history when we started to progressively and permanently tread more lightly on the earth, taking less from it and generally caring for it better, even as we humans continue to become more numerous and prosperous. The work of Paul Romer, who shared the 2018 Nobel Prize in economics, is one of the sources of this confidence. Growth Mindset Romer's largest contribution to economics was to show that it's best not to think of new technologies as something that companies buy and bring in from the outside, but instead as something they create themselves (the title of his most famous paper, published in 1990, is "Endogenous Technological Change"). These technologies are like designs or recipes; as Romer put it, they’re "the instructions that we follow for combining raw materials." This is close to the definitions of technology presented in chapter 7. Why do companies invent and improve technologies? Simply, to generate profits. They come up with instructions, recipes, and blueprints that will let them grow revenues or shrink costs. As we saw repeatedly in chapter 7, capitalism provides ample incentive for this kind of tech progress. So far, all this seems like a pretty standard argument for how the first two horsemen work together. Romer's brilliance was to highlight the importance of two key attributes of the technological ideas companies come up with as they pursue profits. The first is that they're nonrival, meaning that they can be used by more than one person or company at a time, and that they don't get used up. This is obviously not the case for most resources made out of atoms—I can't also use the pound of steel that you've just incorporated into the engine of a car—but it is the case for ideas and instructions. The Pythagorean theorem, a design for a steam engine, and a recipe for delicious chocolate chip cookies aren't ever going to get "used up" no matter how much they're used. The second important aspect of corporate technologies is that they're partially excludable. This means that companies can kind of prevent others from using them. They do this by keeping the technologies secret (such as the exact recipe for Coca-Cola), filing for patents and other intellectual-property protection, and so on. However, none of these measures is perfect (hence the words partially and kind of). Trade secrets leak. Patents expire, and even before they expire, they must describe the invention they're claiming and so let others study it. Partial excludability is a beautiful thing. It provides strong incentives for companies to create useful, profit-enhancing new technologies that they alone can benefit from for a time, yet it also ensures that the new techs will eventually "spill over"—that with time they’ll diffuse and get adopted by more and more companies, even if that's not what their originators want. Romer equated tech progress to the production by companies of nonrivalrous, partially excludable ideas and showed that these ideas cause an economy to grow. What's more, he also demonstrated that this idea-fueled growth doesn't have to slow down with time. It's not constrained by the size of the labor force, the amount of natural resources, or other such factors. Instead, economic growth is limited only by the idea-generating capacity of the people within a market. Romer called this capacity "human capital" and said at the end of his 1990 paper, "The most interesting positive implication of the model is that an economy with a larger total stock of human capital will experience faster growth." This notion, which has come to be called "increasing returns to scale," is as powerful as it is counterintuitive. Most formal models of economic growth, as well as the informal mental ones most of us walk around with, feature decreasing returns—growth slows down as the overall economy gets bigger. This makes intuitive sense; it just feels like it would be easier to experience 5 percent growth in a $1 billion economy than a $1 trillion one. But Romer showed that as long as that economy continued to add to its human capital—the overall ability of its people to come up with new technologies and put them to use—it could actually grow faster even as it grew bigger. This is because the stock of useful, nonrivalrous, nonexcludable ideas would keep growing. As Romer convincingly showed, economies run and grow on ideas. The Machinery of Prosperity Romer's ideas should leave us optimistic about the planetary benefits of digital tools—hardware, software, and networks—for three main reasons. First, countless examples show us how good these tools are at fulfilling the central role of technology, which is to provide "instructions that we follow for combining raw materials." Since raw materials cost money, profit-maximizing companies are particularly keen to find ways to use fewer of them. So they use digital tools to come up with beer cans that use less aluminum, car engines that use less steel and less gas, mapping software that removes the need for paper atlases, and so on and so on. None of this is done solely for the good of the earth—it's done for the pursuit of profit that's at the heart of capitalism—yet it benefits the planet by, as we've seen, causing us to take less from it. Digital tools are technologies for creating technologies, the most prolific and versatile ones we've ever come up with. They're machines for coming up with ideas. Lots of them. The same piece of computer-aided design software can be used to create a thinner aluminum can or a lighter and more fuel-efficient engine. A drone can be used to scan farmland to see if more irrigation is needed, or to substitute for a helicopter when filming a movie. A smartphone can be used to read the news, listen to music, and pay for things, all without consuming a single extra molecule. In the Second Machine Age, the global stock of digital tools is increasing much more quickly than ever before. It's being used in countless ways by profit-hungry companies to combine raw materials in ways that use fewer of them. In advanced economies such as America's, the cumulative impact of this combination of capitalism and tech progress is clear: absolute dematerialization of the economy and society, and thus a smaller footprint on our planet. The second way Romer's ideas about technology and growth are showing up at present is via decreased excludability. Pervasive digital tools are making it much easier for good designs and recipes to spread around the world. While this is often not what a company wants—it wants to exclude others from its great cost-saving idea— excludability is not as easy as it used to be. This isn't because of weaker patent protection, but instead because of stronger digital tools. Once one company shows what's possible, others use hardware, software, and networks to catch up to the leader. Even if they can't copy exactly because of intellectual-property restrictions, they can use digital tools to explore other means to the same end. So, many farmers learn to get higher yields while using less water and fertilizer, even though they combine these raw materials in different ways. Steve Jobs would certainly have preferred for Apple to be the only provider of smartphones after it developed the iPhone, but he couldn't maintain the monopoly no matter how many patents and lawsuits he filed. Other companies found ways to combine processors, memory, sensors, a touch screen, and software into phones that satisfied billions of customers around the world. The operating system that powers most non-Apple smartphones is Android, which is both free to use and freely modifiable. Google's parent company, Alphabet, developed and released Android without even trying to make it excludable; the explicit goal was to make it as widely imitable as possible. This is an example of the broad trend across digital industries of giving away valuable technologies for free. The Linux operating system, of which Android is a descendant, is probably the best-known example of free and open-source software, but there are many others. The online software repository GitHub maintains that it's "the largest open source community in the world" and hosts millions of projects. The Arduino community does something similar for electronic hardware, and the Instructables website contains detailed instructions for making equipment ranging from air-particle counters to machine tools, all with no intellectual-property protection. Contributors to efforts such as these have a range of motivations (Alphabet's goals with Android were far from purely altruistic—among other things, the parent of Google wanted to achieve a quantum leap in mobile phone users around the world, who would avail themselves of Google Search and services such as YouTube), but they're all part of the trend of technology without excludability, which is great news for growth. As we saw in chapter 10, smartphone use and access to the Internet are increasing quickly across the planet. This means that people no longer need to be near a decent library or school to gain knowledge and improve their abilities. Globally, people are taking advantage of the skill-building opportunities of new technologies. This is the third reason that the spread of digital tools should make us optimistic about future growth: these tools are helping human capital grow quickly. The free Duolingo app, for example, is now the world's most popular way to learn a second language. Of the nearly 15 billion Wikipedia page views during July of 2018, half were in languages other than English. Google's chief economist, Hal Varian, points out that hundreds of millions of how-to videos are viewed every day on YouTube, saying, "We never had a technology before that could educate such a broad group of people anytime on an as-needed basis for free." Romer's work leaves me hopeful because it shows that it's our ability to build human capital, rather than chop down forests, dig mines, or burn fossil fuels that drives growth and prosperity. His model of how economies grow also reinforces how well capitalism and tech progress work together, which is a central point of this book. The surest way to boost profits is to cut costs, and modern technologies, especially digital ones, offer unlimited ways to combine and recombine materials—to swap, slim, optimize, and evaporate—in cost-reducing ways. There's no reason to expect that the two horsemen of capitalism and tech progress will stop riding together anytime soon. Quite the contrary. Romer's insights reveal that they're likely to gallop faster and farther as economies grow. Our Brighter, Lighter Future The world still has billions of desperately poor people, but they won't remain that way. All available evidence strongly suggests that most will become much wealthier in the years and decades ahead. As they earn more and consume more, what will be the impact on the planet? The history and economics of the Industrial Era lead to pessimism on this important question. Resource use increased in lockstep with economic growth throughout the two centuries between James Watt's demonstration of his steam engine and the first Earth Day. Malthus and Jevons seemed to be right, and it was just a question of when, not if, we'd run up against the hard planetary limits to growth. But in America and other rich countries something strange, unexpected, and wonderful happened: we started getting more from less. We decoupled population and economic growth from resource consumption, pollution, and other environmental harms. Malthus's and Jevons's ideas gave way to Romer's, and the world will never be the same. This means that instead of worrying about the world's poor becoming richer, we should instead be helping them upgrade economically as much and as quickly as possible. Not only is it the morally correct thing to do, it's also the smart move for our planet. As today’s poor countries get richer, their institutions will improve and most will eventually go through what Ricardo Hausmann calls "the capitalist makeover of production." This makeover doesn't enslave people, nor does it befoul the earth. As today’s poor get richer, they'll consume more, but they'll also consume much differently from earlier generations. They won't read physical newspapers and magazines. They'll get a great deal of their power from renewables and (one hopes) nuclear because these energy sources will be the cheapest. They’ll live in cities, as we saw in chapter 12; in fact, they already are. They'll be less likely to own cars because a variety of transportation options will be only a few taps away. Most important, they'll come up with ideas that keep the growth going, and that benefit both humanity and the planet we live on. Predicting exactly how technological progress will unfold is much like predicting the weather: feasible in the short term, but impossible over a longer time. Great uncertainty and complexity prevent precise forecasts about, for example, the computing devices we’ll be using thirty years from now or the dominant types of artificial intelligence in 2050 and beyond. But even though we can't predict the weather long term, we can accurately forecast the climate. We know how much warmer and sunnier it will be on average in August than in January, for example, and we know that global average temperatures will rise as we keep adding greenhouse gases to the atmosphere. Similarly, we can predict the "climate" of future technological progress by starting from the knowledge that it will be heavily applied in the areas where it can affect capitalism the most. As we've seen over and over, tech progress supplies opportunities to trim costs (and improve performance) via dematerialization, and capitalism provides the motive to do so. As a result, the Second Enlightenment will continue as we move deeper into the twenty-first century. I'm confident that it will accelerate as digital technologies continue to improve and multiply and global competition continues to increase. We’ll see some of the most striking examples of slim, swap, evaporate, and optimize in exactly the places where the opportunities are biggest. Here are a few broad predictions, spanning humanity's biggest industries. Manufacturing. Complex parts will be made not by the techniques developed during the Industrial Era, but instead by three- dimensional printing. This is already the case for some rocket engines and other extremely expensive items. As 3-D printing improves and becomes cheaper, it will spread to automobile engine blocks, manifolds and other complicated arrangements of pipes, airplane struts and wings, and countless other parts. Because 3-D printing generates virtually no waste and doesn't require massive molds, it accelerates dematerialization. We'll also be building things out of very different materials from what we're using today. We're rapidly improving our ability to use machine learning and massive amounts of computing power to screen the huge number of molecules available in the world. Well use this ability to determine which substances would be best for making flexible solar panels, more efficient batteries, and other important equipment. Our search for the right materials to use has so far been slow and laborious. That's about to change. So is our ability to understand nature's proteins, and to generate new ones. All living things are made out of the large biomolecules known as proteins, as are wondrous materials such as spiders' silk. The cells in our bodies are assembly lines for proteins, but we currently understand little about how these assembly lines work—how they fold a two-dimensional string of amino acids into a complicated 3-D protein. But thanks to digital tools, we're learning quickly. In 2018, as part of a contest, the AlphaFold software developed by Google DeepMind correctly guessed the structure of twenty-five out of forty-three proteins it was shown; the second-place finisher guessed correctly three times. DeepMind cofounder Demis Hassabis says, "We [haven't] solved the protein-folding problem, this is just a first step... but we have a good system and we have a ton of ideas we haven't implemented yet." As these good ideas accumulate, they might well let us make spider-strength materials. Energy. One of humanity's most urgent tasks in the twenty-first century is to reduce greenhouse gas emissions. Two ways to do this are to become more efficient in using energy and, when generating it, to shift away from carbon-emitting fossil fuels. Digital tools will help greatly with both. Several groups have recently shown that they can combine machine learning and other techniques to increase the energy efficiency of data centers by as much as 30 percent. This large improvement matters for two reasons. First, data centers are heavy users of energy, accounting for about 1 percent of global electricity demand. So efficiencies in these facilities help. Second, and more important, these gains indicate how much the energy use of all our other complicated infrastructures— everything from electricity grids to chemical plants to steel mills—can be trimmed. All are a great deal less energy efficient than they could be. We have both ample opportunity and ample incentive now to improve them. Both wind and solar power are becoming much cheaper, so much so that in many parts of the world they're now the most cost-effective options, even without government subsidies, for new electrical generators. These energy sources use virtually no resources once they're up and running and generate no greenhouse gases; they're among the world champions of dematerialization. In the decades to come they might well be joined by nuclear fusion, the astonishingly powerful process that takes place inside the sun and other stars. Harnessing fusion has been tantalizingly out of reach for more than half a century—the old joke is that it's twenty years away and always will be. A big part of the problem is that it's hard to control the fusion reaction inside any human- made vessel, but massive improvements in sensors and computing power are boosting hope that fusion power might truly be only a generation away. Transportation. Our current transportation systems are chronically inefficient. Most vehicles aren't used much of the time, and even when they’re in use, they're not nearly full. Now that we have technologies that let us know where every driver, passenger, piece of cargo, and vehicle is at all times, we can greatly increase the utilization and efficiency of every element of transportation. Renting instead of owning transportation is a likely consequence of this shift. Instead of owning cars, which typically sit idle more than 90 percent of the time, more people will choose to access transportation as needed. We're already seeing this with car-hailing companies such as Uber and Lyft. These services are quickly spreading around the world, and expanding to cover more modes of transportation, from motorbikes to bicycles to electric scooters. They're also moving into commercial applications such as long- and short-haul trucking. As this shift continues, we’ll need fewer tons of steel, aluminum, plastic, gasoline, and other resources to move the world's people and goods around. We might also experience less congestion and gridlock as we try to get around. Bikes and scooters take up little space compared to cars, so streets can accommodate many more of them. Technology also gives us the ability to implement many forms of "congestion pricing," which has been shown to reduce gridlock by making car access to busy streets expensive enough that people use other options. The most intriguing future transportation platform of all might be the sky. The same technologies that power today's small drones can be scaled up to build "air taxis" with as many as eight propellers and no pilot. Such contraptions sound like science fiction today, but they might be carrying us around by midcentury. Agriculture. As we saw in chapter 5, leading farms have demonstrated an ability to increase their tonnage of output year after year while decreasing their use of inputs such as land, water, and fertilizer. This trend toward optimization will continue thanks to a set of innovations under the label precision agriculture. The precision comes from many sources, including better sensors of plant and animal health, soil quality and moisture, and so on; the ability to deliver fertilizer, pesticides, and water just where they're needed; and machinery that adapts itself to each plant or animal. All these varieties of precision will combine to allow traditional farms to generate more from less. So will changes to the genomes of plants and animals. DNA modifications will increase disease and drought tolerance, expand where crops can be grown, and allow us to get more of what we want from each crop or herd. As we saw in chapter 9, they'll also allow us to take better care of vulnerable populations such as infants in poor countries by creating golden rice and other nutrition enhancers. We'll also be able to make much more precise and targeted genetic modifications thanks to a new crop of gene-editing tools that are large improvements over their more scattershot predecessors. Opposition to genetically modified organisms is fierce in some quarters, but isn't based on reason or science. This opposition will, one hopes, fade. Throughout human history, just about all farming has been done in fields. For some crops, this is now changing. Agriculture has moved indoors, where parameters such as light, humidity, fertilizer, and even the composition of the atmosphere can be precisely monitored and controlled. In everything from urban buildings to shipping containers, crops are now being grown with progressively less labor and fewer material inputs. These completely contained farms will spread and help reduce the planetary footprint of our agriculture. These examples aren't intended to be comprehensive, and I don't have precise estimates of how likely each innovation is, or when it's most likely to occur. I offer them only to indicate how broad and exciting are the possibilities offered by the two horsemen of capitalism and technological progress, and how they’ll continue to dematerialize our consumption and let us increase our prosperity while treading more lightly on our planet.

#### 2] CCS. Markets are key.

Gregory F. Nemet et al. 16, Associate Professor, La Follette School of Public Affairs, University of Wisconsin–Madison, Martina Kraus, German Institute for Economic Research Vera Zipperer, German Institute for Economic Research, November, 2016, The Valley of Death, the Technology Pork Barrel, and Public Support for Large Demonstration Projects, La Follette School Working Paper No. 2016-007

Because the ultimate (but not immediate) goal of supporting demonstrations is to facilitate widespread adoption, demand a6nd thus markets are of course key (Kingsley et al., 1996). In climate change, policies are central to those markets (Taylor et al., 2003; Zhou et al., 2015), thus credibility in those policies is also central (Rai et al., 2010; Finon, 2012). But it is striking how many demonstration programs confronted markets that involved negative shocks around the time that projects came on-line—we see it in synfuels, biofuels, and solar thermal electricity (Figure 9), and CCS (Figure 10). The 1.9 year average lag from project initiation to time on-line is crucial. It would be a mistake to assume a Hotelling price path in which prices of an exhaustible resource (e.g. oil, atmospheric storage of CO2) rise at a constant pure rate of time preference. In this case the relevant price is the level at which avoided CO2 emissions are remunerated. Rather the experience of the past suggests we are more likely to see shocks and boom–bust cycles (Krautkraemer, 1998; Zaklan et al., 2011). We see it in our data in the prices related to each demonstration program (Figure 8). Lupion and Herzog (2013) attribute the failure of the NER300 program to stimulate the construction of any CCS projects to 4 factors: competition with renewables, project complexity, low carbon prices, and a combination of fiscal austerity and weak climate policy around the global financial crisis. Note that three of the four problems involved future demand, not the funding structure itself. Demonstrations need markets that pay off innovation investments not just under a steadily increasing Hotelling-style market, but under a broad range of market conditions. Features of robust demand pull include niche markets (Kemp et al., 1998), hedging across jurisdictions (Nemet, 2010), and flexible production (Sanchez and Kammen, 2016). Government price guarantees have played an important role as we have seen on synfuels, solar thermal electricity, and on a smaller scale, photovoltaics.

#### Try or die for CCS to solve warming

Moniz 9/23/19 - 13th Secretary of Energy (2013 to 2017) and is the founder and CEO of the Energy Futures Initiative

Fredd Krupp is president of the Environmental Defense Fund, Ernest Moniz, “Cutting Climate Pollution Isn’t Enough — We Also Need Carbon Removal,” Text, TheHill, September 23, 2019, <https://thehill.com/opinion/energy-environment/462609-cutting-climate-pollution-isnt-enough-we-also-need-carbon-removal>.

It has been almost four years since the Paris climate agreement was signed. But as leaders gather in New York this week for the United Nations Climate Change Summit, the world remains far off track from meeting the Paris objective of limiting global warming to well below 2 degrees Celsius -- and pursuing efforts at 1.5 degrees.

To meet that target, the world must achieve a 100 percent clean economy — one that produces net zero emissions, or no more climate pollution than can be removed from the atmosphere — soon after mid-century, with the United States and other advanced economies reaching that milestone no later than 2050. It’s a daunting but doable task.

The consequences of falling short are enormous. This year, the U.S. government’s fourth National Climate Assessment documented the huge economic and social impacts of unchecked warming. The Pentagon has repeatedly warned of the impacts on national security and our troops.

Achieving a 100 percent clean economy will require a swift transition to renewables and other zero-carbon energy sources. But we also need to face the reality that meeting the Paris target will require taking carbon out of the atmosphere at massive scale. In part, that’s because eliminating emissions will be very challenging for some sectors, especially the transportation industry and agriculture. Removing carbon from the atmosphere would also bring concentrations down, helping to stabilize the climate at safer levels. So, the push for clean energy must be supplemented by a suite of technologies known as carbon dioxide removal (CDR).

It is not a question of what we’d prefer. It’s a question of insurmountable math.

The crucial role carbon removal must play is becoming more widely recognized. The 2018 Intergovernmental Panel on Climate Change report stressed the importance of carbon removal, and the U.S. National Academies of Sciences, Engineering and Medicine late last year estimated that ten billion tons of CO2 will need to be pulled from the atmosphere annually by 2050, and double that by 2100. For context, today’s global emissions are less than 40 billion tons per year. If the 10 billion tons of CO2 from CDR were stored underground, that would be roughly double the world’s annual oil production.

The good news is that there are a surprisingly large number of promising pathways for carbon dioxide removal. Nature-based approaches include reforestation and forest management as well as agricultural practices that increase carbon stored in soils. Some of the attendant challenges include competition for land and permanence of the carbon sequestration.

Technological approaches include direct air capture — machines that actually suck carbon from the air — and technologically-enhanced natural processes, such as plants genetically modified with deep roots to fix carbon in the soil; enhanced mineralization, which uses certain reactive rocks to bind with carbon from the air; and accelerated ocean uptake in phytoplankton. These technologies are immature and require considerable research, development and demonstration to ensure viability and affordability at very large scale.

Despite the urgency, there is no dedicated federal effort to develop these crucial technologies; existing programs are piecemeal and largely focused on sequestering emissions from industrial and electricity generating sources.

The National Academies recommended the rapid establishment of a robust, focused, scalable and accelerated federal research program spanning the Departments of Energy and Agriculture, the National Oceanic and Atmospheric Administration and the National Science Foundation, among others. Such a program would encompass the full range of technological pathways that can remove CO2 from the environment. ‘’Clearing the Air,’’ an analysis of CDR’s value and a proposed plan to deploy it, has been completed by the Energy Futures Initiative. Over the next decade, the program scale would be about a billion dollars a year.

Carbon dioxide removal is not a magic bullet. We must do everything we can to deploy innovative low- and zero-carbon methods to generate electricity, heat homes, fuel vehicles, and power industry, creating new economic opportunities in the process. Tackling the climate crisis also requires placing a declining limit and a price on carbon pollution, as well as a significant increase in energy technology innovation and deployment across the board.

But CDR is also not a “Plan B.” It is a critical part of any “Plan A” for climate, a necessary complement to emission reduction. It can provide more flexibility and optionality in policy planning, which could ease the transition to a carbon-neutral economy while minimizing transition costs and providing greater assurance that science-based climate goals can be met in a timely manner. It would eventually enable a net negative global economy that could bring the atmospheric carbon concentrations down — and global temperatures with it.

We have delayed meaningful action for far too long. As a result, the scale and urgency of the challenge is such that we cannot simply work on doing better in the future. We need to correct what we did in the past. Carbon removal is the enabler.

### Technocratic Management/ Good

#### Their entire aff says algorithmic governance is bad. Their Genovese 17 evidence lists out elements of technoscientific development they disagree with. It says quote technoscientific development—as I have argued in previous chapters—science and science fiction are melded into a Baudrillardian simulation where artificial intelligence, autonomous rocket boosters that land on autonomous drone ships, and a constant human presence in outer space is the sedimentation of hyperreality.

#### We’ll defend these simulations as good.

#### Solves conflict.

Corneliu Bjola 19, Head of the Oxford Digital Diplomacy Research Group, University of Oxford, 11/10/19, “Diplomacy in the Age of Artificial Intelligence,” http://www.realinstitutoelcano.org/wps/portal/rielcano\_en/contenido?WCM\_GLOBAL\_CONTEXT=/elcano/elcano\_in/zonas\_in/ari98-2019-bjola-diplomacy-in-the-age-of-artificial-intelligence

Taking note of the fact that developments in AI are so dynamic and the implications so wide-ranging, another report prepared by a German think tank calls on Ministries of Foreign Affairs (MFAs) to immediately begin planning strategies that can respond effectively to the influence of AI in international affairs. Economic disruption, security & autonomous weapons, and democracy & ethics are the three areas they identify as priorities at the intersection of AI and foreign policy. Although they believe that transformational changes to diplomatic institutions will eventually be needed to meet the challenges ahead, they favour, in the short term, an incremental approach to AI that builds on the successes (and learns from the failures) of “cyber-foreign policy”, which, in many countries, has been already internalised in the culture of the relevant institutions, including of the MFAs.13 In the same vein, the authors of a report prepared for the Centre for a New American Security see great potential for AI in national security-related areas, including diplomacy. For example, AI can help improve communication between governments and foreign publics by lowering language barriers between countries, enhance the security of diplomatic missions via image recognition and information sorting technologies, and support international humanitarian operations by monitoring elections, assisting in peacekeeping operations, and ensuring that financial aid disbursements are not misused through anomaly detection.14

From an AI perspective, consular services could be a low-hanging fruit for AI integration in diplomacy as decisions are amenable to digitisation, the analytical contribution is reasonable relevant and the technology favours collaboration between users and the machine. Consular services rely on highly structured decisions, as they largely involve recurring and routinised operations based on clear and stable procedures, which do not need to be treated as new each time a decision has to be made (except for crisis situations, which are discussed further below). From a knowledge perspective, AI-assisted consular services may embody declarative (know-what) and procedural knowledge (know-how) to automate routinised operations and scaffold human cognition by reducing cognitive effort. This can be done by using data mining and data discovery techniques to organize the data and make it possible to identify patterns and relationships that would be difficult to observe otherwise (e.g., variation of demand for services by location, time, and audience profile).

Case study #1: AI as Digital Consul Assistant

The consulate of country X has been facing uneven demand for emergency passports, visa requests and business certifications in the past five years. The situation has led to a growing backlog, significant loss of public reputation and a tense relationship between the consulate and the MFA. An AI system trained with data from the past five years uses descriptive analytics to identify patterns in the applications and concludes that August, May and December are the most likely months to witness an increase of the demand in the three categories next year. AI predictions are confirmed for August and May but not for December. AI recalibrates its advice using updated data and the new predictions help consular officers manage requests more effectively. As the MFA confidence in the AI system grows, the digital assistant is then introduced to other consulates experiencing similar problems.

Digital platforms could also emerge as indispensable tools for managing diplomatic crises in the digital age and for good reasons. They can help embassies and MFAs make sense of the nature and gravity of the events in real-time, streamline the decision-making process, manage the public’s expectations, and facilitate crisis termination. At the same time, they need to be used with great care as factual inaccuracies, coordination gaps, mismatched disclosure level, and poor symbolic signalling could easily derail digital efforts of crisis management.15 AI systems could provide great assistance to diplomats in times of crisis by helping them make sense of what it is happening (descriptive analytics) and identify possible trends (predictive analytics). The main challenge for AI is the semi-structured nature of the decisions to be taken. While many MFAs have pre-designed plans to activate in case of a crisis, it is safe to assume that reality often defies the best crafted plans. Given the high level of uncertainty in which crisis decision-making operates and the inevitable scrutiny and demand of accountability to occur if something goes wrong, AI integration can work only if humans retain control over the process. As a recent SIPRI study pointed out, AI systems may fail spectacularly when confronted with tasks or environments that differ slightly to those they were trained for. Their algorithms are also opaque, which makes difficult for humans to explain how they work and whether they include bias that could lead to problematic –if not dangerous– behaviours.16

### Private Space Good

#### 1] Space privatization is good—it prevents war and ensures sustainably-sourced space projects for public good.

Frankowski 17 [(Paweł, assistant Professor at the Chair of International Relations and Foreign Policy, Institute of Political Science and International Relations, Jagiellonian University) “Outer Space and Private Companies: Consequences for Global Security,” 2017, pg. 144-145] TDI

In the terms of privatization and space security, space remains relatively untapped, but commercial and military benefits from space exploration/exploitation could even lead to ‘privatization of space’. Such privatization will result from growing pressure on spacefaring countries to defect from cooperation, since is less viable with good number of multiple actors who entered the space.36 However, space policy and space research are characterized by very high costs, which are rather impossible to bear by private companies, limited by economic calculation. As pointed out earlier, under-investment in technological development by private companies it is related to the fact that these actors are not focused on profits of a social nature, such as improving the quality of life of the recipient of the product.37 This makes some technology, potentially beneficial to society, not developed or introduced into use, because the profit margin is too small to make this viable for commercial players.

To conclude, privatization of space security can develop in unexpected way, but in today’s space environment private actors would rather play the role of security regulators than security providers. When investment in space technologies is less profitable than other areas of economy, private actors would focus on soft law and conflict prevention in space, and new private initiatives will appear. For example, apart from important space companies, as SpaceX or Blue Origin active in outer space, other private actors as Secure World Foundation (SWF), who focus on space sustainability, will play more important role in crafting international guidelines for space activities.38 This path the way for future solutions and projects, as cleaning the space debris, extracting resources from asteroids and planetoids, refuelling satellites, providing payload capabili-ties for governmental entities on market-based logic, will be based on activity non-state actors, providing soft law and regulatory solutions, where space faring states are unable to find any compromise. Therefore private companies will be in fact global (or space) regulators, as part of UNCOPUS, being involved in space activities.39

The last argument for private involvement in space security comes from an approach based on common good and resilience of space assets, emphasized by the Project Ploughshares, as an important part of space security. As of 2017 there are more than 700,000 man-made objects on the Earth’s orbit bigger than 1 cm, while 17,000 of them are bigger than 10 cm.40 Some of them are traced by SSA systems, both American and European, but these systems are public-military owned, and private operators are not granted any access to this data. Any collision of space object with space debris, even with small particles, might result in a chain reaction, called Kessler’s syndrome, and not only private but public, and military assets will be destroyed or impaired. In such conditions, a reluctant cooperation between the public and private sector, and unwillingness to share vulnerable data by public actors seem to confirm that private space activity is more than necessary. This is an apparent case when logic of mistrust between state powers must be overcome by private actors, perhaps by suggesting common preferences for debris mitigation, and space situational awareness. In the case of space debris, Space Data Association, an initiative supported by private sector, with its main aim to enhance data sharing between commercial satellite operators, could be an example of nascent public good provided by private actors for the sake of global security.

#### 2] Space colonization solves extinction and endless resource wars.

Collins 10 [Patrick Collins, professor of economics at Azabu University in Japan, and a Collaborating Researcher with the Institute for Space & Astronautical Science, as well as adviser to a number of companies, Adriano V. Autino is President of the Space Renaissance International; Manager, CEO/CTO, Systems Engineering Consultant / Trainer at Andromeda Systems Engineering LLC; and Supplier of methodological tools and consultancy at Intermarine S.p.A, Acta Astronautica, Volume 66, Issues 11–12, June–July 2010, “What the growth of a space tourism industry could contribute to employment, economic growth, environmental protection, education, culture and world peace”, Pages 1553–1562]

7. World peace and preservation of human civilisation

The major source of social friction, including international friction, has surely always been unequal access to resources. People fight to control the valuable resources on and under the land, and in and under the sea. The natural resources of Earth are limited in quantity, and economically accessible resources even more so. As the population grows, and demand grows for a higher material standard of living, industrial activity grows exponentially. The threat of resources becoming scarce has led to the concept of “Resource Wars”. Having begun long ago with wars to control the gold and diamonds of Africa and South America, and oil in the Middle East, the current phase is at centre stage of world events today [37]. A particular danger of “resource wars” is that, if the general public can be persuaded to support them, they may become impossible to stop as resources become increasingly scarce. Many commentators have noted the similarity of the language of US and UK government advocates of “war on terror” to the language of the novel “1984” which describes a dystopian future of endless, fraudulent war in which citizens are reduced to slaves.

7.1. Expansion into near-Earth space is the only alternative to endless “resource wars”

As an alternative to the “resource wars” already devastating many countries today, opening access to the unlimited resources of near-Earth space could clearly facilitate world peace and security. The US National Security Space Office, at the start of its report on the potential of space-based solar power (SSP) published in early 2007, stated: “Expanding human populations and declining natural resources are potential sources of local and strategic conflict in the 21st Century, and many see energy as the foremost threat to national security” [38]. The report ended by encouraging urgent research on the feasibility of SSP: “Considering the timescales that are involved, and the exponential growth of population and resource pressures within that same strategic period, it is imperative that this work for “drilling up” vs. drilling down for energy security begins immediately” [38].

Although the use of extra-terrestrial resources on a substantial scale may still be some decades away, it is important to recognise that simply acknowledging its feasibility using known technology is the surest way of ending the threat of resource wars. That is, if it is assumed that the resources available for human use are limited to those on Earth, then it can be argued that resource wars are inescapable [22] and [37]. If, by contrast, it is assumed that the resources of space are economically accessible, this not only eliminates the need for resource wars, it can also preserve the benefits of civilisation which are being eroded today by “resource war-mongers”, most notably the governments of the “Anglo-Saxon” countries and their “neo-con” advisers. It is also worth noting that the $1 trillion that these have already committed to wars in the Middle-East in the 21st century is orders of magnitude more than the public investment needed to aid companies sufficiently to start the commercial use of space resources.

Industrial and financial groups which profit from monopolistic control of terrestrial supplies of various natural resources, like those which profit from wars, have an economic interest in protecting their profitable situation. However, these groups’ continuing profits are justified neither by capitalism nor by democracy: they could be preserved only by maintaining the pretence that use of space resources is not feasible, and by preventing the development of low-cost space travel. Once the feasibility of low-cost space travel is understood, “resource wars” are clearly foolish as well as tragic. A visiting extra-terrestrial would be pityingly amused at the foolish antics of homo sapiens using long-range rockets to fight each other over dwindling terrestrial resources—rather than using the same rockets to travel in space and have the use of all the resources they need!

7.2. High return in safety from extra-terrestrial settlement

Investment in low-cost orbital access and other space infrastructure will facilitate the establishment of settlements on the Moon, Mars, asteroids and in man[/woman]-made space structures. In the first phase, development of new regulatory infrastructure in various Earth orbits, including property/usufruct rights, real estate, mortgage financing and insurance, traffic management, pilotage, policing and other services will enable the population living in Earth orbits to grow very large. Such activities aimed at making near-Earth space habitable are the logical extension of humans’ historical spread over the surface of the Earth. As trade spreads through near-Earth space, settlements are likely to follow, of which the inhabitants will add to the wealth of different cultures which humans have created in the many different environments in which they live.

Success of such extra-terrestrial settlements will have the additional benefit of reducing the danger of human extinction due to planet-wide or cosmic accidents [27]. These horrors include both man-made disasters such as nuclear war, plagues or growing pollution, and natural disasters such as super-volcanoes or asteroid impact. It is hard to think of any objective that is more important than preserving peace. Weapons developed in recent decades are so destructive, and have such horrific, long-term side-effects that their use should be discouraged as strongly as possible by the international community. Hence, reducing the incentive to use these weapons by rapidly developing the ability to use space-based resources on a large scale is surely equally important [11] and [16]. The achievement of this depends on low space travel costs which, at the present time, appear to be achievable only through the development of a vigorous space tourism industry.

### Genovese

#### Their theory of communication is wrong – being post-truth doesn’t negate the possibility nor the necessity of pragmatic action. There’s no offense—they believe in the possibility of truth and communication too, otherwise they couldn’t ask for a ballot—rigorous testing of truth claims through debate is effective and a better guide for action than throwing truth to the wind

Horsthemke 17 [Kai, Bildungsphilosophie und Systematische Pägagogik, Katholische Universität Eichstätt-Ingolstadt, “‘#FactsMustFall’? – education in a post-truth, post-truthful world,” Ethics and Education, June 28 2017, dml]

Higgins suggests that human beings should be understood to ‘make meaning and apprehend truth from radically different standpoints and worldviews, and that our great wealth and freedom will likely lead to more, not fewer, disagreements about the world’. ‘In the post-truth era’, she says, we should be able to articulate not one but many different perspectives. … Our post-truth era, in short, need not be an obstacle to taking common action. We might see today’s divided expert class, and fractious publics, not as temporary problems to be solved by more reason, science, and truth, but rather as a permanent feature of our developed democracy. We might even see this proliferation of belief systems and worldviews as an opportunity for human development. We can agree to disagree and still engage in pragmatic action in the world. (Higgins 2013) How would one account for human development in the absence of a common commitment to rationality and truth, and what would constitute a standard for successful ‘pragmatic action’? In the absence of truth, which helps distinguishing knowledge from mere belief, how would one even make sense of ‘understanding’? If it is to have any meaning at all, understanding requires reference to an objective framework, to facts (whether natural or social), truth, the way things are, etc. Understanding, admittedly, is context-dependent, because it has a characteristically subjective component. Nonetheless, it obtains its meaning, its cognitive force, from its additional, essential connection with truth: it is directed towards truth, towards the way the world is. Higgins is right about one thing: beliefs and belief systems vary, but she errs in taking this to imply that ‘there is only … a perspective “knowing”’, or ‘deep pluralism’ with regard to truth – that apprehension from ‘radically different standpoints and worldviews’ is all that can be said about truth. (A favourite postmodernist sleight-of-hand is to refer to ‘truthS’.) Similarly, Arendt (1967, 5) correctly emphasizes diversity of human opinions. Yet, this acknowledgement does not, indeed cannot, require us to fetishize cognitive pluralism and epistemological diversity (see Levisohn and Phillips 2012; Siegel 2012). People’s opinions and judgements differ, yet – as Ronald Beiner has put it – ‘they are drawn together in political argument and rational debate because of what they share: a common aspiration to apprehend moral and political truth’ (Beiner 2008, 32). In The Human Condition, Arendt uses the image of a table to illustrate her conception of a public world: ‘To live together in the world means essentially that a world of things is between those who have it in common, as a table is located between those who sit around it; the world, like every inbetween, relates and separates men at the same time’ (Arendt 1998, 52). Beiner sees this ‘image of the world that simultaneously separates us and draws us together’ as workingequally well to capture our relationship to truth. Our opinions divide us, but we wouldn’t be motivated to formulate our opinions, articulate them, and thus share them with others unless we were participants at a deeper level in a shared quest for moral and political truth that draws us back together as a community of truth-seekers. Exercising political judgment means that holding differing opinions never separates us sufficiently to cancel out this community of shared aspiration. (Beiner 2008, 132) Educational implications What are the implications for education? Studies indicate that children, teenagers, students and also adults are increasingly unable to distinguish between news and fake news, between a scientific study and a sponsored advertisement. (The latter is usually marked by the indicator ‘sponsored content’.)14 What makes this even more remarkable is that the internet also greatly facilitates the cross-checking of received information. People have always been gullible and easily persuaded by data and statistics, however fabricated. Thus, the ‘digital intelligence’ so frequently attributed to children and teenagers is a bit of a myth, or at least only partially applicable – which points to the urgent need for courses promoting internet intelligence and digital literacy that many schools have already begun to offer.15 In this regard, too, the New York Times16 recently launched its first major brand campaign in decades, a not-entirely-non-commercial campaign that is based on a fact – that the truth matters, now more than ever. The truth, as our journalists can attest, is also incredibly hard to get to. We remain undeterred in our efforts to reveal and report the facts with integrity and courage. The newspaper invites the committed public to share ‘the work and [to participate] in our student subscription sponsorship program, which brings The New York Times to public classrooms across America’. What about the curriculum? Not included, at least not under the guise of ‘knowledge’, should be mere beliefs or opinions unanchored by reason/s, bald assertions, superstitions, prejudice, bias – in fact anything that involves myth, fabrication and constitutes an infringement on the cognitive rights of learners. However, it may be pedagogically and epistemically useful to teach these qua beliefs, opinions, assertions, superstitions, prejudice and bias. This would no doubt strengthen students’ reasoning and critical thinking abilities, something I take – without adducing reasons – to be desirable. While something might be said for teaching strategies that are not directly truth-promoting, like playing devil’s advocate

or trying on an argument for size, good practice is arguably modelled by educators who pursue truth and who are truthful and sincere in their interactions with others. Yet, it is no longer sufficient to present knowledge, to make facts available. There is also a need for second-order elucidation that – over and above transmission and mediation of contents – also provides information about their origin, how they came to be, and that advertises the rationality at work in content selection. Classical gate-keeping must be accompanied by what might be called ‘gate-informing’ – which goes beyond selection of relevant information and knowledge to include making one’s selection criteria transparent, providing information about one’s sources, a self-reflective, dialogically oriented defence of relevance and plausibility, and claims to objectivity. Simply put, academics and teachers have to be prepared to explain again and again how they work and why they say what they say. Gate-informing also has to be used, without false modesty or politically correct restraint, to counteract disinformation, moral manipulation, and the like.

#### No link to their securitization argument – our impacts are real and justified by statistical analysis that’s better than their vague postmodern ramblings.