## 1NC

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#### The aff is not a break from dualistic thinking but reifies it. Appeals to space as being the dominion of all humankind, free to explore for the benefit of our common heritage, promote an image of humanity unburdened by its material environment.

Ferrando 16 [(Francesca, Ph.D. in philosophy, M.A. in Gender Studies, Professor.@ NYU) “Why Space Migration Must Be Posthuman”, 2016, http://ndl.ethernet.edu.et/bitstream/123456789/76546/1/147.pdf.pdf#page=136yperlink] TDI

In 2008, NASA released an official Statement on the Environmental Impact (PEIS), which takes into consideration the environmental impact of space tech- nology on Earth, but it does not acknowledge its impact on other celestial bodies, such as the Moon or other planets of the Solar System. Critical to this type of anthropocentric and Earth-centric approach, William Kramer underlines: “there is no comprehensive process required...for assessing human impacts on those extraterrestrial environments” (2014, 216). Space technology and space-based human activity shall be analyzed from a view which takes into account their effects not only on humans and on Earth, but on outer space as well. In order to address this issue, we first need to engage with the question asked by Reinman (2009): is (outer) space an environment? If so, it shall be regulated under specific environ- mental conditions. In Reinman’s opinion, “space at large should not enjoy a moral status equal to Earth” (ibid., 86), as she grants a primacy to Earth based on bio-centric values: “In many ways Earth, with its unique, abundant life, is special. There is nothing quite like it in the Solar System” (ibid.). Although the point raised by Reinman is of key importance to our discussion, from a posthuman perspective, regarding the Earth as “special” because of its life abundance is problematic, being supported by an Earth-centric, bio-centric and quantitative principle which supremacy is not inherently justified; life itself, in fact, is a slippery concept.

The current understanding of life is merely descriptive, not definitive: the border between animate/inanimate is difficult to mark and is often transgressed.24 Viruses, for instance, exhibit some of the characteristics which are common to organic life, while they are missing others, challenging the biological concept of life itself.25 More in general, it can be stated that life is not a clearly defined notion; instead, as Michel Foucault noted: “Life...is a category of classification, relative, like all the other categories, to the criteria one adopts” (1966; Engl. Transl. 1970, 161). Going back to Reinman’s conclusions, she underlines an aspect of strategic relevance for a posthumanist sensitivity: “humans’ actions towards their surroundings will continue to affect people whether we live on Earth or in space” (2009, 86). Let’s reflect further upon this point. The non-human agency of matter (Barad 2007), as high- lighted within the frame of New Materialism, plays a key role in allowing us to recognize agency to planets, stars and asteroids. The relational onto-epistemological approach of New Materialism makes us think on the possible astro-ecological impacts of Moon mining, or of terraforming in Mars,26 on the balance of the solar system and, eventually, on their orbits. Even the environmentally-sound concept of space-based solar power (cf. Ernst 2013) should be considered from perspectives others than Earth. Object-Oriented Ontology, and in particular the notion of “Hyperobjects” (Morton 2013), highlights the material viscosity of objects whose performance exceeds both a particular space and a particular time: reading the current opening of the space market from this perspective will unmask the long-term irreversible consequences of our present actions.

Space is the next frontier, where new resources, habitats and life forms are currently being sought: in November 2015, the United States Government passed the “Commercial Space Launch Competitiveness Act “[t]o facilitate a pro-growth environment for the developing commercial space industry by encouraging private sector investment” (U.S. Commercial Space Launch Competitiveness Act 2015). Although approaching outer space as a resource may spark interest and funding, from an heideggerian perspective, it is ontologically limiting and epistemologically partial, based on an Earth-centered policy sustained by an anthropocentric Weltanschauung. Furthermore, the “Space Act” may contravene the international regulations laid down by the “Outer Space Treaty” (1967), a key document ratified by 104 countries, including the US, which still represents the legal framework for space activity. The Office for Outer Space Affairs of the United Nations summarizes the following principles as the main ones sustaining the Treaty:

the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind; outer space shall be free for exploration and use by all States; outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means; States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner; the Moon and other celestial bodies shall be used exclusively for peaceful purposes; astronauts shall be regarded as the envoys of mankind; States shall be responsible for national space activities whether carried out by gov- ernmental or non-governmental entities; States shall be liable for damage caused by their space objects; and States shall avoid harmful contamination of space and celestial bodies. (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space 1967)

As we can see, this document is based on the principle of the common heritage of humankind, according to which “outer space is not subject to national appropriation by claim of sovereignty”. Conceived during the Cold War, the Treaty inaugurates a post-nationalistic post-bellic approach to space, setting a new paradigm which has departed from the dualistic imprinting of “us” against “them”. Although still within an anthropocentric schemata focussed on the interests of “mankind”, the step is huge. For instance, celestial bodies shall be used “for peaceful purposes” and shall not be contaminated; astronauts are considered the “envoys” of humankind.27 The human frame has been opened and expanded: posthumanism has entered the gates to the heavens.

#### Their view of “junk” as a threat to techno-capital expansion is an attempt to bury their co-constitutive ecology. It is only the image of the objects of our accumulation remaining to haunt us.

Ivakhiv 18 [(Adrian, Professor of Environmental Thought and Culture at the University of Vermont) Shadowing the Anthropocene: Eco-Realism for Turbulent Times, 2018] TDI

The signs are there for those who pay attention to them. Reports of melting glaciers and impending crashes. Crashes of the ocean’s fish stocks, mass extinctions on a scale not seen in 65 million years. Stock market crashes, internet seizures and data breaches, doomsday viruses online and off. Plane crashes and mysterious disappearances in Indian or Mediterranean seas. Rising sea levels and strengthening storms, with tag-teamed hurricanes battering and flooding coastal areas. Hundred-year droughts arriving in back to back years. Swirling accumulations of trash in the middles of the world’s oceans. Accumulations of toxic particles, radioactive dust, and microscopic plastic pellets in the bodies and bloodstreams of every living thing on Earth. Accumulations of space junk in the atmosphere. Mountains of waste, electronic and otherwise, building up to WALL·E-like sce- narios, but without Disney/Pixar’s (or the Buy-N-Large corpo- ration’s) interstellar cruise-ship escape.

Sooner or later, the trash will hit the fan, the crash will burst the dam, the supercollider will hit with the full force of its im- pact. The mad rush for land, for survival, for salvation, will begin in earnest, even for the most protected of us. These are among the material ecologies that make up the era tendentiously and contentiously called the Anthropocene, the New Era of the Human. There are other kinds of ecologies be- sides these material ones: social ecologies, and perceptual ecologies. I’ll explain why it’s better to think in threes than in twos, and why the social, the material, and the perceptual make a useful frame for thinking of the ecologies that constitute the world.

Our social ecologies work the same way as our material ecologies, with blowback to widening inequalities and horrific injustices coming in the form of movements of growing refugee populations—economic refugees, climate refugees, refugees from wars fought over the stakes of all these crashes and the political violence and terror that accompanies them.

Between the material and the social are the fleshy, intersensorial dynamics from which the material and the social, or the “objective” and the “subjective,” continually emerge. Drawing from the ecosophies of Félix Guattari and Gregory Bateson, I will call these our mental or perceptual ecologies. Blowback there comes as guilt, bad dreams, ghostly observances fractur- ing our sensory perceptions, inarticulate rage against those who question the tacitly held consensus. This is the hauntedness of the present by the abyss of an ungraspable and inconceivable future. It is these affective undercurrents that are our responses to the eyes of the world haunting us from out of the corners of our vision. (More on those eyes later.) They are what makes us feel that things aren’t right—a hint at the traumatic kernel of real- ity that both psychoanalyst Jacques Lacan and, with a different inflection, Buddhist philosophers have placed at the origin of the self, but which in a collective sense is coming back to haunt us globally.

We misperceive the nature of the world for the same reasons that we misperceive the nature of our selves. Every social and linguistic order interpellates its members—it shapes and hails them into existence with a call of “Hey you!” Each does it differ- ently. But over the course of the storied history of humans — not the meta-narrative of the Anthropos, just the patchy tale of humanity in its quiverings and coruscations—most such or- ders have incorporated into that interpellation some sense of responsibility to more-than-human entities or processes. In whatever way they were conceived—as spirits or divinities, or as kin, or in terms of synthetic narrative or conceptual meta- phors like life-force, the Way, the path, li and ren, 礼 and 仁, the four directions, Muntu and Ubuntu, Buen Vivir, Nepantla, some gift-giving and life-renewing sacrifice, and so on—these have typically borne a central connection to the kinds of relations we now categorize as ecological. (At least for those social orders that worked.)

Modern western capitalism has fragmented these relations, setting us up individually in relation to the products of a seem- ingly limitless marketplace. But it has left us collectively rudder- less. So if scientists, the empirical authorities of our time, tell us we are fouling our habitat, we have yet to figure out how to respond to that, at least at the global scales where most of the problems become manifest.

This is why it is the relational, more than the substantive or “objectal,” that humans, especially westerners, need to come to terms with. That is in part the argument of this book. Commodity capitalism has been profoundly successful at encouraging us to think that objects are real, and at projecting value into those objects so that they serve the needs of individuals, even if they never manage to do that (which is, of course, the point). The effects of our actions, on the other hand, are systemic and relational, and we won’t understand them unless we come to a better appreciation of how systems and relational ecologies work and of how we are thoroughly enmeshed within them.

At the same time, it is the objects that haunt us: the refuse swirling around in the middle of the Pacific, the mountains of excreted e-waste, the stuff we send down our chutes, out our drains, off to the incinerator, the river, the ocean, the atmosphere—the black holes, out of sight and out of mind, from which we hope they never re-emerge. When they do re-emerge, in our fantasies and nightmares, we reify them as the Thing, a Demon, a Host—as in Bong Joon-Ho’s thriller of that name, about a river monster embodying the legacy of industrial pollution in South Korea’s Han River. The objects become sublime. If our consumptive, commodity-captivated and spectacle- enraptured society has privileged the object over the process, the thing at the center of our attention over the relations that constitute it, this thing-centeredness should not surprise us. In part, it is an effect of the human perceptual apparatus, with its heavy reliance on vision, a sensory modality that shows clear edges to objects and that facilitates distanced observation and predation. Where traditional cultures de-emphasized the visual in favor of the auditory or multisensorial, the narrative, and the relational, societies like ours—fragmented and individualized, intensely visually mediated, and ecologically and historically disembedded societies (in the sense described by Karl Polanyi in his paradigm defining The Great Transformation)1 — push the ontological objectivism, literally the “thing-ism,” about as far as it can go.

#### The impact is a state of permanent war—their political discourses surrounding space make militarization inevitable and turns the case.

Dickens and Ormrod 16 [(Peter Dickens, Senior Research Associate in the Department of Sociology at the University of Cambridge, member of the Red-Green Study Group in London, James S Ormrod, Principal Lecturer in Sociology at the University of Brighton), “The Future of Outer Space”, *The Palgrave Handbook of Society, Culture and Outer Space*] TDI

This continued relationship was not coincidental. As a number of contributions here show, the appeal of outer space lay in the promise of conquering the wondrous or Godly and hence the elevation of the status of humanity (or, rather more specifically, white men). This is not necessarily that dissimilar to the process Sims describes in his chapter, whereby myths ‘record time’. Ormrod illustrates this in his chapter through analysis of Tsiolkovsky’s science fiction in which the best human beings are able to fly like angels in space. As Kilgore notes in his chapter, Carl Sagan owed his continued appeal to his simultaneous reproduction of wonder as well as knowledge. The British celebrity cosmologist Brian Cox (see Mellor, this volume, for more on him) has arguably taken this even further, such that his popular shows and writing dedicate more time to what is unknown than to knowledge itself. These lacunae became spaces for wild imaginative projects – projects more captivating than any empirical knowledge. It is no wonder that the continued disenchantment and re-enchantment of the universe have become a major theme in recent work. Based largely on studies of astronauts’ experiences, Kilbryde (2015) argues that space exploration can potentially be a means of overcoming the dualism through which outer space is constructed as an object, and thus of experiencing unity. This is provided that the sense of awe and wonder it engenders is not sought as a ‘possession’ of the individual or as something to be subsequently rationalized.

It is the invocation of obstacles that produces space as something potentially unconquerable, and hence worth conquering. And yet the obliteration of the irrational or wondrous sweeps the ground from underneath such a project. To the extent that outer space has become an abstract space, it has been foreclosed as a frontier. It is a frontier, but a frontier without a future. In removing the possibility of an elsewhere, it serves only to secure terrestrial hegemony. In their own ways, both Baudrillard and Virilio present such a view of outer space. For Baudrillard, it was in any case a frontier that served as a model for terrestrial life, which set the permissible limits for struggle and confrontation within it. He concludes,

Through the orbital inscription of a spatial object, it is the planet earth that becomes a satellite, it is the terrestrial principle of reality that becomes eccentric, hyperreal, and insignificant. Through the orbital installation of a system of control like peaceful coexistence, all the terrestrial microsystems are satellized and lose their autonomy. (p. 35)

Everyone on Earth is neutralized and homogenized. The proliferation of space technology since he was writing, and the blurring of civilian and military technologies, has only broadened the potential of such an understanding. Parks and Schwoch (2012, p. 4), in the context of the ‘satellization’ of global security, refer to the satellites as ‘the ultimate rationalization and instrumentalization of the quest for global security and domination’.

For Virilio, there was such a homology between the technologies of war, the image of space as a battlefield and the political discourses about space that the future seemed equally foreclosed. He makes the claim that any space is constituted ‘from the outside’ (cited in Bormann, 2009, p. 80). That is to say, it is perceived on the basis of that which precedes it. Bormann is therefore able to argue that ‘nothing about outer space is “out there”, what we get to know about outer space is always socially, spatially and locally embedded’ (p. 80). Bormann, following Virilio, seems to believe that this is especially true of the vacuum of outer space:

[O]ther than the view there is no physical or physiological contact. No hearing, no feeling in the sense of touching materials, with the exception of an actual Moon landing. Thus the conquest of space, of outer space – isn’t it more the conquest of the image of space?

(Virilio & Ujica, 2003, cited in Bormann, 2009, p. 84)

Bormann reaches the pessimistic conclusion that ‘the perpetuation of outer space as a sphere of permanent war and its claims to weaponization will soon make no alternative possible’ (p. 84). This is the product, in the large part, of her assumption that ‘[w]hat we get to know about the space of outer space is dominated by information provided through the possibilities (and limits) of military technology’ (p. 81).

#### Viewing humanity as distinct from and in relation to “nature” is inherently violent – concerns about purity and contamination spill into violent discourses of race, sexuality, and immigration that culminate in eugenics.

Carroll 18 [(Myles, PhD Candidate, Department of Political Science, York University, Toronto, Ontario), “Narrating technonatures: discourses of biotechnology in a neoliberal era”, Journal of Political Ecology, Volume 25 Issue 1,2018, https://journals.librarypublishing.arizona.edu/jpe/article/id/2078/

Although they may have been strategically useful for mobilizing public awareness and concern over the surreptitious introduction of GM foods into the food system, nature purity discourses are problematic for two reasons. First, appeals to nature have been used to justify racist, sexist, heterosexist and colonial systems of oppression and domination, whilst underpinning common conservative justifications for material inequality (Sturgeon 2009). Instead of being part of the struggle for a more socially just world, the nature purity side of the anti-GMO campaign acts to further entrench nature-essentialism. Central to feminist, antiracist, queer and postcolonial struggles is the destabilization and problematization of truth claims rooted in nature (Soper 1995). This is because "nature" has been used as a justification for white, male and Western superiority. The ideas that women are "naturally" more emotional, weaker, or less intelligent than men; that colonized peoples are "closer to nature" and therefore less civilized than Westerners; that the sexuality of queer people is inherently "unnatural"; that it is "human nature" to be greedy and selfish; or that "natural selection" is what determines who is rich and who is poor have long been mobilized as justifications for systemic oppression. It is not only transgenic crops that are seen as monstrous, contaminating and polluting. We must ask which forms of human corporeality and self-expression come to be similarly framed and defamed when such discourses are presented and accepted as truth.4

This semantic link between eschewing GMOs' unnaturalness and the social implications of understanding certain human subjectivities as "unnatural" or "out of place" is no more obvious than in the policies of Austria's Freedom Party. Their overall policy approach to GMOs demonstrates concern over purity, contamination, dirt; and parallels their attitudes toward immigrants. Just as they eschew the violation of the genetic purity of their crops, they do not want the genetic purity of the Austrian nation to be contaminated with foreign blood and culture. It is not hard to see in such purity-based rejections of contaminant populations, whether transgenic crops or asylum seekers, the encroaching veil of eugenics. As Haraway (1997: 61) says, "the history and current politics of racial and immigration discourses in Europe and the United States ought to set off acute anxiety ... [We] cannot help but hear in the biotechnology debates the unintended tones of fear of the alien and suspicion of the mixed." If part of the project of radical emancipatory politics has been to deconstruct and dispel the notion that there is a "natural" order that is inherently "pure", "true" and "just", then invocations of the nature-as-pure narrative run counter to that project. They reinforce the notion that there is a nature that holds the essence of truth; that governs us and dictates the contours of morality to us, and that we must accept and obey. Rather than appealing to natural essentialisms as the MAdGE campaign does, we must critique, deconstruct and interrogate such claims to nature-as-truth.

Second, nature-as-pure narratives are problematic because they prevent us from seeing how the current manifestation of GMOs is a result of contingent and mutable political economic arrangements that are themselves necessarily violent but not necessary. Outright rejections of GMOs based on their "unnaturalness" force us into a dichotomy whereby we can either have GMOs governed within the framework of neoliberal capitalism, or we must get rid of them altogether. The potential for GMOs to be incorporated into an agri-food system that is socially just is precluded from the discussion, and the tenuous and contingent link between biotechnology and neoliberalism goes unchallenged. Concerns for the ethical implications of a world where market rationality and the profit motive dictate everything and nothing is left to "nature" are understandable (see Rifkin 1997). But this is a world of our current capitalist system given technological omnipotence and ethical free-reign, and not an intrinsic consequence of technoscience itself. Moreover, while the political economic implications of such a critique may be encouraging as a warning against the long-term consequences of biotechnological capitalism, the case of Tasmania's Clean and Green policy demonstrates that these discourses can just as easily be mobilized in the interests of capital and to the cause of neoliberalization. Tasmania uses the neoliberal cultural lexicon to achieve its brand status as clean and green. Without a deeper critique of the pernicious effects of GMO agriculture as it is currently constituted under capitalism, oppositional movements that lambast GMOs' violation of nature can just as likely be the basis of a new niche-market accumulation strategy for capital as an emancipatory resistance effort against it.

While these activist groups' and political parties' rhetoric mobilize nature-culture dualisms that constitute the natural and cultural worlds as ontologically distinct and oppositional, I want to emphasize that the use of these discourses and dualisms is not some clever ploy of activists to prey on the irrational fears of unsuspecting publics, but a reflection of deeply engrained cultural beliefs about nature and our relationship with(in) it. Rhetoric situated within a nature-culture dualistic framing is not the result of any deliberate attempt by activists to exploit the strategic expediency of those discourses, even if they may ultimately be of strategic benefit. Also, it is important to note that the extent to which groups' rhetoric adheres to the framing of natural purity discourse and extends nature-culture dualistic thinking is highly variable and contradictory. Just as culture and society cannot be separated from the so-called "natural" world, neither can dualistic framings and rhetoric be separated from the cultural context from which they emanate.

It is in this way that we can understand the use of nature purity narratives as a critique rooted in what Gramsci termed "common sense." Oppositional actors articulate their concerns through the cultural lexicon thatis immediately intelligible to them, in this case, the "unnaturalness" of GMOs. Because of the cultural pervasiveness of nature-culture dualisms, this line of criticism is intuitively resonant with publics, and reflects common sense understandings of the world that do not require a deeper reflexive analysis of structural dynamics to make sense. However, though these common sense framings are thus easily accessible to publics, they prevent us from understanding underlying conditions that may ultimately be more critically problematic. For this reason, Gramsci calls for the renovation of common sense into good sense, or a critical, reflexive understanding of the underlying and relational bases of injustice and oppression. With the case of GMOs, this might include a deconstructive approach to the idea that GMOs are "unnatural" coupled with a critical political economic analysis of the way GMOs are imbricated within neoliberal capitalist power relations and the pernicious social, political and ecological consequences that may bring. Yet this is not to say that each movement falls on one side of a good sense-common sense dualism. On the contrary, real world activism often combines common sense and good sense framings, both consciously and unconsciously. Still, there are clear examples of movements that have rooted their critiques in the tangible political-economic consequences of GMOs under neoliberalism and avoided eschewing GMOs as unnatural, indicating that the distinction between common sense approaches and good sense approaches deserves analytical consideration. I will now examine these good sense approaches to anti-GMO activism.

#### The alternative is to see that nature is us—recognizing the logic of the 1AC as the primary barrier to overcoming challenges to our environment and beyond.

Baskin 15 [(Jeremy, Senior Fellow at the Melbourne School of Government where he focuses on the legitimacy and accountability of knowledge) Paradigm Dressed as Epoch: The Ideology of the Anthropocene, 2015, Environmental Values] TDI

Even the limited examples from the literature already cited suggest that the assumptions of proponents of the Anthropocene about managerialism, technology and expertise are transparent and explicit. In almost all major accounts of the concept it is assumed that responding to the end of nature, and the challenges of the Anthropocene, requires a trinity of techniques: clear management of the Earth and Earth-systems, guided by experts (and scientists/engineers in particular), using the most advanced technology possible (including large- scale technology).

The challenges themselves are typically framed by a sense of emergency. The great weight of accumulating scientific data is recruited, to show how the human species and its planet are at risk. Landscapes and seascapes are being transformed, boundaries are being breached, non-linear processes have been unleashed, system pressures are rising and tipping points are either happening or looming; and all of this is both unprecedented in human history and fundamentally anthropogenic in cause.

Certainly recognition of the made-ness of the natural world means acknowledging that this carries responsibilities for the relevant human socie- ties, even a degree of conscious management. For leading proponents of the Anthropocene, the scale of management required is commonly seen, implicitly or explicitly, as global: since we face global problems, global management is needed to run the Earth in the Anthropocene. But what does it mean to frame policies within a global, universalist goal of ‘running the Earth’, and what condition are we trying to manage it towards?

Those of a more Aidosean inclination have spoken of the need to manage a return to the Holocene, or Holocene-like conditions, since this is ‘the only global environment that we are sure is “safe operating space” for the complex, extensive civilization that Homo sapiens has constructed’ (Steffen et al., 2011b: 747). This is the best way to manage the risks we face as we increasingly cross the planetary boundaries. The Prometheans, by contrast, argue that we should manage our way towards ‘a better Anthropocene’ (Ellis, 2011). The internal logic of the argument surely lies with the Prometheans. If humanity acknowledges and embraces its role as Earth-manager, and if we are indeed ‘post-nature’ and ‘nature is us’, then it is clearly impossible to return the Earth to the Holocene (or at least it would take millennia to do so). Why not aim for a ‘better’ Earth, or a more benign climate in which Norwegians are less cold, and Saudi Arabians less hot? For our purposes, however, the point is that the Aidosean and Promethean versions differ over the direction and goals of plan- etary management, rather than the need for it.

Managing the Anthropocene is also understood to come with special responsibilities for the scientific and engineering community (Crutzen, 2002). Only they are likely to have the knowledge, data and skills required in this new Age of Humans. At one level, one should not read too much into this, since the key proponents of the concept happen to be scientists and, not surprisingly, are more alert to the extent of their own knowledge and insights. Certainly sci- entists in the Anthropocene would have a key role as diagnosticians and, with engineers, as generators of specific technologies. But there is something troubling in the idea of scientists as both informants and saviours. Whilst policy needs to be informed by science, experience teaches that we should remain wary of the idea that policy can or should be guided by the science (Jasanoff, 1990; Pielke, 2007). As we know from the ‘climate wars’, the barriers to bringing down carbon-dioxide concentrations are almost entirely related to global and local politics, vested interests, deep-rooted values, economic structures and so on. For well over a decade they have been almost entirely unrelated to there being a lack of scientific data or new technologies (see Pielke, 2007: 71–2).

#### The alt is a prerequisite – the consequences and ethics of laws concerning space cannot be divorced from the language that produces them.

Ferrando 16 [(Francesca, Ph.D. in philosophy, M.A. in Gender Studies, Professor.@ NYU) “Why Space Migration Must Be Posthuman”, 2016, http://ndl.ethernet.edu.et/bitstream/123456789/76546/1/147.pdf.pdf#page=136yperlink] TDI

Etymologically, the term “human” comes from the Latin term “humus”3 meaning “soil”, which, in our solar system, is only present on Earth. We can thus see migrating to space as the linguistic and semiotic step towards the literal creation of post-humans, that is, beings “post” (Latin for “behind” and “after”) their earthly provenance. Furthermore, as we will see in the course of this chapter, space migration will expand the notion of the human, aligning it with a posthumanist sensitivity. In the history of planet Earth, most human societies have developed around dualistic ways of thinking, based on symbolic binaries such as: human/robot, human animals/non-human animals, female/male, black/white, good/evil, nature/culture, self/other. Such a dualistic mindset brought along bio-centric, human-centric, sexist, racist, ethnocentric practices and homophobia, along with eco-disasters and war. If humans migrate to space with a dualistic mindset, and if history is any indication, “space colonization” is then likely to precipitate species discrimination and planetary wars.

Language is not innocent: in order to set a post-dualistic approach to our futures, we should start with a critical analysis of our own terminology. The postmodern post-colonial legacy of the posthuman does not support the use of the term “space colonization”, since the notion of “colonialism” is embedded in historical contexts and discriminatory policies which have been rigorously analyzed and criticized within the field of Post-Colonial Studies (cf. Said 1978; Spivak 1987). This chapter will adopt, instead, the term “space migration”, offering a revisitation of humanistic, anthropocentric and Earth-centric practices. And still, space cannot be analyzed in separation from Earth: these realms are inextricably related and shall be investigated in conjunction. In order to demonstrate this important point, we will reflect upon the relevance of the study of celestial bodies in the formation of human civilizations; then, we will highlight the impact of current space technology on planet Earth; thirdly, we will delve into the relevance of space migration to a revision of the notion of the human itself. Posthumanism, as a post-humanism (in the sense of the humanistic tradition), a post-anthropocentrism (Braidotti 2013) and, more in general, a post-dualism, represents a well suited philosophy to pursue this onto-epistemological shift. The dynamics of space migration will thus be inquired by reconciling the varied philosophical landscape of the posthuman, bridging dif- ferent schools of thought such as: Philosophical Posthumanism, Transhumanism, New Materialism and Object-Oriented Ontology.

### 1NC – Debris

#### 1 - Non UQ – squo debris thumps – BD reads blue

Orwig 16 [(Jessica, MS in science and tech journalism from Texas A&M, BS in astronomy and physics from Ohio State) “Russia says a growing problem in space could be enough to spark a war,” Insider,’ January 26, 2016, <https://www.businessinsider.com/russia-says-space-junk-could-spark-war-2016-1>] TDI

NASA has already [warned that](https://www.businessinsider.com/space-junk-at-critical-density-2015-9) the large amount of space junk around our planet is growing beyond our control, but now a team of Russian scientists has cited another potentially unforeseen consequence of that debris: War.

Scientists estimate that anywhere from 500,000 to 600,000 pieces of human-made space debris between 0.4 and 4 inches in size are currently orbiting the Earth and traveling at speeds over [17,000 miles per hour](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html).

If one of those pieces smashed into a military satellite it "may provoke political or even armed conflict between space-faring nations," Vitaly Adushkin, a researcher for the Institute of Geosphere Dynamics at the Russian Academy of Sciences, reported in a paper set to be published in the peer-reviewed journal [Acta Astronautica](https://www.sciencedirect.com/science/article/pii/S0094576515303416), which is sponsored by the International Academy of Astronautics.

#### 2 - Public sector mining thumps.

NASA 19 [“NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids,” NASA, June 11, 2019, <https://www.nasa.gov/press-release/nasa-invests-in-tech-concepts-aimed-at-exploring-lunar-craters-mining-asteroids>] TDI

NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids

Robotically surveying lunar craters in record time and mining resources in space could help NASA establish a sustained human presence at the Moon – part of the agency’s broader [Moon to Mars exploration](https://www.nasa.gov/specials/moon2mars/) approach. Two mission concepts to explore these capabilities have been selected as the first-ever Phase III studies within the [NASA Innovative Advanced Concepts](https://www.nasa.gov/niac) (NIAC) program.

“We are pursuing new technologies across our development portfolio that could help make deep space exploration more Earth-independent by utilizing resources on the Moon and beyond,” said Jim Reuter, associate administrator of NASA’s Space Technology Mission Directorate. “These NIAC Phase III selections are a component of that forward-looking research and we hope new insights will help us achieve more firsts in space.”

The Phase III proposals outline an aerospace architecture, including a mission concept, that is innovative and could change what’s possible in space. Each selection will receive as much as $2 million. Over the course of two years, researchers will refine the concept design and explore aspects of implementing the new technology. The inaugural Phase III selections are:

Robotic Technologies Enabling the Exploration of Lunar Pits

William Whittaker, Carnegie Mellon University, Pittsburgh

This mission concept, called Skylight, proposes technologies to rapidly survey and model lunar craters. This mission would use high-resolution images to create 3D model of craters. The data would be used to determine whether a crater can be explored by human or robotic missions. The information could also be used to characterize ice on the Moon, a crucial capability for the sustained surface operations of NASA’s Artemis program. On Earth, the technology could be used to autonomously monitor mines and quarries.

[Mini Bee Prototype to Demonstrate the Apis Mission Architecture and Optical Mining Technology](https://www.nasa.gov/directorates/spacetech/niac/2019_Phase_I_Phase_II/Mini_Bee_Prototype)

Joel Sercel, TransAstra Corporation, Lake View Terrace, California

This flight demonstration mission concept proposes a method of asteroid resource harvesting called optical mining. Optical mining is an approach for excavating an asteroid and extracting water and other volatiles into an inflatable bag. Called Mini Bee, the mission concept aims to prove optical mining, in conjunction with other innovative spacecraft systems, can be used to obtain propellant in space. The proposed architecture includes resource prospecting, extraction and delivery.

#### 3 - Asteroid mining fails.

Fickling 20 [(David, Bloomberg opinion columnist, previously at Guardian and Financial Times, MA in Eng Lit from Cambridge) “We’re Never Going to Mine the Asteroid Belt,” Bloomberg Opinion, December 21, 2020, <https://www.bloomberg.com/opinion/articles/2020-12-21/space-mining-on-asteroids-is-never-going-to-happen>] TDI

It’s wonderful that people are shooting for the stars — but those who declined to fund the expansive plans of the nascent space mining industry were right about the fundamentals. Space mining won’t get off the ground in any foreseeable future — and you only have to look at the history of civilization to see why.

One factor rules out most space mining at the outset: gravity. On one hand, it guarantees that most of the solar system’s best mineral resources are to be found under our feet. Earth is the largest rocky planet orbiting the sun. As a result, the cornucopia of minerals the globe attracted as it coalesced is as rich as will be found this side of Alpha Centauri.

Gravity poses a more technical problem, too. Escaping Earth’s gravitational field makes transporting the volumes of material needed in a mining operation hugely expensive. On Falcon Heavy, the large rocket being developed by Elon Musk’s SpaceX, transporting a payload to the orbit of Mars comes to as little as [$5,357 per kilogram](https://www.spacex.com/media/Capabilities&Services.pdf) — a drastic reduction in normal launch costs. Still, at those prices just lofting a single half-ton drilling rig to the asteroid belt would use up the annual exploration budget of a small mining company.

Power is another issue. The international space station, with 35,000 square feet of solar arrays, generates up to 120 kilowatts of electricity. That drill would need a [similar-sized power plant](https://www.rocktechnology.sandvik/en/products/exploration-drill-rigs-and-tools/compact-core-drill-rigs/) — and most mining companies operate multiple rigs at a time. Power demands rise drastically once you move from exploration drilling to mining and processing. Bringing material back to Earth would raise the costs even more. Japan’s Hayabusa2 satellite spent six years and 16.4 billion yen ($157 million) recovering a single gram of material from the asteroid Ryugu and returning it to Earth earlier this month.

#### 4 - Alliances check miscalc – too costly.

MacDonald 13 [(Bruce, teaches at the United States Institute of Peace on strategic posture and space/cyber security issues, leads a study on China and Crisis Stability in Space, and is adjunct professor at the Johns Hopkins School of Advanced International Studies) “Deterrence and Crisis Stability in Space and Cyberspace,” in Anti-satellite Weapons, Deterrence and Sino-American Space Relations, September 2013, <https://apps.dtic.mil/dtic/tr/fulltext/u2/a587431.pdf>] TDI

The US alliance structure can promote deterrence and crisis stability in space, as with nuclear deterrence. China has no such alliance system. If China were to engage in large-scale offensive counter-space operations, it would face not only the United States, but also NATO, Japan, South Korea and other highly aggrieved parties. Given Beijing’s major export dependence on these markets, and its dependence upon them for key raw material and high technology imports, China would be as devastated economically if it initiated strategic attacks in space. In contrast to America’s nuclear umbrella and extended deterrence, US allies make a tangible and concrete contribution to extended space deterrence through their multilateral participation in and dependence upon space assets. Attacks on these space assets would directly damage allied interests as well as those of the United States, further strengthening deterrent effects.

#### Asteroid mining significantly reduces emissions when mining scarce resources

Emerging Technology 18 [(Emerging Technology, A team from the MIT Technology Review magazine, owned by the Massachusetts Institute of Technology. Emerging Technology from the arXiv covers the latest ideas and technologies that appear on the Physics arXiv preprint server.) “Asteroid mining might actually be better for the environment,” MIT Technology Review, 10-19-2018]SN

For a certain kind of investor, asteroid mining is a path to untold riches. Astronomers have long known that asteroids are rich in otherwise scarce resources such as platinum and water. So an obvious idea is to mine this stuff and return it to Earth—or, in the case of water, to a moon base or Earth-orbiting space station. There is no shortage of interest in these ventures. In the last decade, investors have funded half a dozen companies that have set their sights on various nearby rocks. To many observers, it’s only a matter of time before such a mission gets the green light. But profit margins are only part of the picture. A potentially more significant aspect of these missions is the impact they will have on Earth’s environment. But nobody has assessed this environmental impact in detail. Today, that changes thanks to the work of Andreas Hein and colleagues at the University of Paris-Saclay in France. These guys have calculated the greenhouse-gas emissions from asteroid-mining operations and compared them with the emissions from similar Earth-based activities. Their results provide some eyebrow-raising insights into the benefits that asteroid mining might provide. The calculations are relatively straightforward. Rocket launches release significant amounts of greenhouse gases into the atmosphere. The fuel on board the first stage of a rocket burns in Earth’s atmosphere to form carbon dioxide. For kerosene-burning rockets, one kilogram of fuel creates three kilograms of CO2. (The second and third stages operate outside the Earth’s atmosphere and so can be ignored.) Reentries are just as damaging. That’s because a significant mass of a re-entering vehicle ablates in the upper atmosphere, producing NOx such as nitrous oxide (N2O), a greenhouse gas that is about 300 times more potent than CO2. By one estimate, the space shuttle released about 20% of its mass in the form of N2O every time it returned to Earth. Hein and co use these numbers to calculate that a kilogram of platinum mined from an asteroid would release some 150 kilograms of CO2 into Earth’s atmosphere. However, economies of scale from large asteroid-mining operations could lower this to about 60 kilograms of CO2 per kilogram of platinum. That needs to be compared with the emission from Earth-based mining. Here, platinum mining generates significant greenhouse gases, mostly from the energy it takes to remove this stuff from the ground. Indeed, the numbers are huge. The mining industry estimates that producing one kilogram of platinum on Earth releases around 40,000 kilograms of carbon dioxide. “The global warming effect of Earth-based mining is several orders of magnitude larger,” say Hein and co. The figures for water are also encouraging. In this case, the authors calculate the greenhouse-gas emissions from an asteroid-mining operation that returns water to anywhere within the moon’s orbit, a so-called cis-lunar orbit. They compare this to the emissions from sending the same volume of water from Earth into orbit. The big difference is that a water-carrying vehicle from Earth can haul only a small percentage of its mass as water. But an asteroid-mining spacecraft can transport a significant multiple of its mass as water to cis-lunar orbit. “Substantial savings in greenhouse gas emissions can be achieved,” say Hein and co.

#### **Space debris being solved now by magnets**

Katie Hunt 21 [Katie Hunt, Cnn. . “Mission to clean up space junk with magnets set for launch ”. 4-1-2021. CNN. [https://www.cnn.com/2021/03/19/business/space-junk-mission-astroscale-scn/index.html. Accessed 7-25-2021](https://www.cnn.com/2021/03/19/business/space-junk-mission-astroscale-scn/index.html.%20Accessed%207-25-2021)]

It's invisible in the night sky, but above us there is a cloud of more than 9,000 tons of space junk -- equivalent to the weight of 720 school buses. This debris is composed of parts of old satellites as well as entire defunct satellites and rocket bodies. The debris poses risks to the International Space Station and threatens things we take for granted on Earth -- weather forecasting, GPS and telecommunications. It's a problem that's getting worse with more and more satellites being launched each year by ventures like Elon Musk's SpaceX. A demonstration mission to test new technology developed by the company Astroscale to clean up space debris is set to launch in the early hours of Saturday from the Baikonur Cosmodrome in Kazakhstan. A Soyuz 2 rocket will launch a 175-kilogram spacecraft with a satellite attached into space. The spacecraft and the 17-kilogram satellite -- the debris to be cleaned up -- will separate and then perform a high-stakes game of cat and mouse over the next few months. Why we don&#39;t know exactly what happened during a near-collision in space Why we don't know exactly what happened during a near-collision in space Astroscale will test the spacecraft's ability to snatch a satellite and bring it down toward the Earth's atmosphere, where it will burn up. It will do this in a series of different maneuvers, with the mission expected to end in September or October of this year. As part of the mission, the company will test whether the spacecraft can catch and dock with the satellite as it tumbles through space at up to 17,500 miles per hour -- several times faster than the speed of a bullet. The tests rely on a magnetic docking plate to latch onto the satellite. Astroscale said it hopes all new satellites being launched will ultimately have this docking plate, allowing them to be safely removed at the end of their life span. What's more, Astroscale said it had already signed a deal with internet satellite company OneWeb. "Now is the time to take the threat of debris seriously by committing to debris removal programs and preparing satellites for future removal at their end of life," said John Auburn, managing director of Astroscale UK and group chief commercial officer. "Avoiding catastrophic collisions will help to protect the space ecosystem and ensure all orbits can continue to thrive sustainably for generations to come." Astroscale is headquartered in Japan but the mission is being controlled from the United Kingdom.

### 1NC – Africa

#### 1 – COVID and 08 recession thump econ il

#### 2 – War on Terror, Central Africa Civil War, etc. thump escalation

#### 3 - No escalation

Barrett 05 [(Robert Barrett, PhD Conflict & Post Doctoral Fellow, Conflict Analysis - University of Calgary & Principal and Senior Partner De Novo Group LLC) “Understanding the Challenges of African Democratization through Conflict Analysis,” IACM 18th Annual Conference, June 1, 2005]

Westerners eager to promote democracy must be wary of African politicians who promise democratic reform without sincere commitment to the process. Offering money to corrupt leaders in exchange for their taking small steps away from autocracy may in fact be a way of pushing countries into anocracy. As such, world financial lenders and interventionists who wield leverage and influence must take responsibility in considering the ramifications of African nations who adopt democracy in order to maintain elite political privileges. The obvious reason for this, aside from the potential costs in human life should conflict arise from hastily constructed democratic reforms, is the fact that Western donors, in the face of intrastate war would then be faced with channeling funds and resources away from democratization efforts and toward conflict intervention based on issues of human security. This is a problem, as Western nations may be increasingly wary of intervening in Africa hotspots after experiencing firsthand the unpredictable and unforgiving nature of societal warfare in both Somalia and Rwanda. On a costbenefit basis, the West continues to be somewhat reluctant to get to get involved in Africa’s dirty wars, evidenced by its political hesitation when discussing ongoing sanguinary grassroots conflicts in Africa. Even as the world apologizes for bearing witness to the Rwandan genocide without having intervened, the United States, recently using the label ‘genocide’ in the context of the Sudanese conflict (in September of 2004), has only proclaimed sanctions against Sudan, while dismissing any suggestions at actual intervention (Giry, 2005). Part of the problem is that traditional military and diplomatic approaches at separating combatants and enforcing ceasefires have yielded little in Africa. No powerful nations want to get embroiled in conflicts they cannot win – especially those conflicts in which the intervening nation has very little interest. It would be a false statement for me to say that there has never been a better time to incorporate the holistic insights of conflict analysis. The most opportune time has likely come and gone. Yet, Africa remains at a crossroads – set amidst the greatest proliferation of democratic regimes in history. It still has a chance. Yet, it is not only up to the West, but also Africans themselves, to stand against corruption, to participate in civil society and to ultimately take the initiative in uncovering and acknowledging the deep underlying issues perpetuating African conflict in order to open the door to democratic advancement and global interaction. Analysis will be the key that unlocks that door.