## 1

#### Interpretation: “Appropriation of outer space” by private entities refers to the exercise of exclusive control of space.

TIMOTHY JUSTIN TRAPP, JD Candidate @ UIUC Law, ’13, TAKING UP SPACE BY ANY OTHER MEANS: COMING TO TERMS WITH THE NONAPPROPRIATION ARTICLE OF THE OUTER SPACE TREATY UNIVERSITY OF ILLINOIS LAW REVIEW [Vol. 2013 No. 4]

The issues presented in relation to the nonappropriation article of the Outer Space Treaty should be clear.214 The ITU has, quite blatantly, created something akin to “property interests in outer space.”215 It allows nations to exclude others from their orbital slots, even when the nation is not currently using that slot.216 This is directly in line with at least one definition of outer-space appropriation.217 [\*\*Start Footnote 217\*\*Id. at 236 (“Appropriation of outer space, therefore, is ‘the exercise of exclusive control or exclusive use’ with a sense of permanence, which limits other nations’ access to it.”) (quoting Milton L. Smith, The Role of the ITU in the Development of Space Law, 17 ANNALS AIR & SPACE L. 157, 165 (1992)). \*\*End Footnote 217\*\*]The ITU even allows nations with unused slots to devise them to other entities, creating a market for the property rights set up by this regulation.218 In some aspects, this seems to effect exactly what those signatory nations of the Bogotá Declaration were trying to accomplish, albeit through different means.219

#### Violation: They spec large constellations

#### Standards:

#### Limits and ground: the aff interpretation explodes the topic to allow any aff about extracting resources which structurally alters the neg research burden because there’s a qualitative difference between appropriation of outer space and of resources. That alters neg ground because it means the aff can defend trivial middle grounds that go beyond just exclusive appropriation unbalancing the topic and also turns pics because smaller affs incentivize more cheaty pics like process because they need generics

#### jurisdiction – the judge doesn’t have the jurisdiction to vote aff if there wasn’t a legitimate aff.

#### TVA solves – you could’ve just read whole rez w debris advantages

#### Use competing interps - Topicality is a binary question, you can’t be reasonably topical

#### No Rvis – they’ll just bait theory and prep it out; illogical – you shouldn’t win for being fair

## 2

#### The subject is alienated when it articulates its desires – incomplete signifiers structure the emergence of subjectivity and produce repetitive drives to fill the lack that justify coercive violence. Thus, the ROB is to traverse the fantasy – that means exposing drives.

Matheson 15 Calum Matheson, PhD, 2015, “Desired Ground Zeroes: Nuclear Imagination and the Death Drive,” University of North Carolina at Chapel Hill, [Calum Matheson is author of Desiring the Bomb: Communication, Psychoanalysis, and the Atomic Age (University of Alabama). He is a former high school debater. His research focuses on intersections of rhetoric, media, and theories of psychoanalysis and deconstruction. His current work focuses on right-wing political extremism, conspiracy thinking, and Lacanian concepts of anxiety and psychosis. He has also published work on argument, history of rhetoric, and games. Dr. Matheson is a former debate coach at Harvard University and a current candidate at the Pittsburgh Psychoanalytic Center.], <https://cdr.lib.unc.edu/concern/dissertations/6682x4537>, SJBE

The Real Jacques Lacan’s notion of the Real is notoriously difficult to define. In his book on the subject, Tom Eyers calls it the “most elusive” of Lacan’s concepts, but one that is also one that is “central” and “determining” for psychoanalysis (1). There are common elements of the various definitions. First, an agreement that both the economy of tropes that allows the conditions for meaning to emerge (the Symbolic) and the meanings and values invested in these tropes, including the subject itself (the Imaginary), do not and cannot perfectly capture all of existence or experience. Second, this unassimilable remainder structures the Symbolic and Imaginary, just as they structure each other, and thus all three registers are knitted together as demonstrated in Lacan’s famous “Borromean Knot.” The Real is what escapes mediation, what disrupts language itself. To explain its significance and relationship to desire requires examining its foundational role in the formation of the subject. The Real can be understood as the constitutive lack of the subject, its separation from the rest of existence by the self-definition necessary for it to come into being in the first place. This is made clear in the mirror stage, where the subject moves from a fragmented, disorganized concept of the body to the “finally donned armor of an alienating identity that will mark his [sic] entire mental development with its rigid structure” (Lacan, “Mirror Stage” 78). The formation of a discrete subject (a function in the Imaginary register) is a compromise. Its formation allows for participation in the Symbolic because to participate in that economy of exchange requires a “social I” (Lacan, “Mirror stage,” 79). This participation comes at the cost of alienation because the subject trades in a world of symbols which by their nature stand in for what is not present, and thus inescapably mediate the (Real) world outside of the subject, rather than making it present. This lack built in to the subject is the engine of desire: the subject’s divide from an object is a prerequisite for the desire of such an object, but the condition of mediation makes it impossible to ever incorporate it in a perfectly satisfying way. Thus desire remains unfulfilled and each chase for a symbol leads to another in loop which the very constitution of the subject dictates must be endless. This is the basic operation of the death drive which is not distinct from Eros. Were the impossible to occur and the drive of Eros to be fulfilled, it would be extinguished, as there would be nothing left to desire. Thus all drives aim, in a sense, at their own extinction, and therefore there is in a sense only one—the drive that aims towards the extinction of desire through its complete fulfillment in continuity with the world that was lost when the subject became distinct from it in the mirror stage. Although the death drive might stand in for the singular character of the drive, it should not be understood as a desire for the actual biological death of the subject’s body, or even the desire to inflict death on others. The self-destruction of the death drive is a desire to break the limits of the self as the alienating armor of the subject by experiencing unmediated contact with the Real. Death still defines its operation in other ways. The last portion of Lacan’s “The Function and Field of Speech and Language in Psychoanalysis” explains the metaphorical centrality of death as the center of a torus formed by incessant symbolization. The fort-da game is most significant not because it shows that the child wishes to destroy its mother or even inoculate itself against that possibility, but because it assimilates the child into the Symbolic order through the repetition of the signifiers fort and da, which stand in for presence and absence. Death is central to language because the symbol itself invokes the absence and loss of nonexistence since its function is to stand in for something that is gone. Language swirls around this absent center of death, a primordial absence encased in the inner ring of the torus, while the outer surfaces of language hold all else that cannot be symbolized at bay on the outside (Lacan, “Function and Field” 260-264). Paradoxically, death is necessarily evoked by the symbol as that which is absent and also made possible in the first place by that same symbol. The separation of the subject into its alienating identity as a social object makes a meaningful concept of death possible because without it there is no dasein, no individual, no singular human to die. George Bataille explains this with an entomological example. If a scientist picks one fly from a swarm, that fly is subject to death, because its end means the end of the discontinuous being selected by the entomologist. Without differentiation of its members, however, the swarm lives on; the selection of the fly is for the entomologist, not the animal (Bataille, “Hegel, Death and Sacrifice” 14-16). Thus it is with human beings. The subject is founded by a rejection of its sole animal nature by participating in a world of work and accumulation, mediated by language—essentially Lacan’s Symbolic. Thus individuals are made discontinuous with the general economy of matter and energy from which all things are formed by a conceptual separation inextricably bound up in death. Our existences are thus defined by discontinuity from a world of continuity, and for Bataille as for Lacan, our drives are singular in the sense that sex is a coupling that unifies with another and momentarily overcomes discontinuity just as death is the end of the subject’s brief separation from a universe differentiated only by the dismembering violence of our imposition of symbols upon it (Bataille, Erotism 13-17). The experience of death may still be unique because it suggests the absence implied by the sign and because it can be experienced only once by the subject—and for obvious reasons, cannot be symbolized by anyone with first-hand experience. As Freud argues in “Thoughts For The Times On War and Death,” we cannot even hope to imagine our own deaths because to do so demands that we imagine them from some perspective which would be destroyed in the experience itself. Death and the Real are therefore not identical, but are closely linked. The most important characteristic of the Real is not just that it suggests existence beyond language, but that this world-for-itself (to borrow from Eugene Thacker) intrudes on human reality and reveals it to be incomplete. Encompassing Max Picard’s concept of silence, the Real is not the absence of human reality so much as the traumatic revelation that that reality was always incomplete, always feigned in the face of existence so much more than human mediation has already covered. Chris Lundberg uses Lacan’s distinction between reality, being the social world of human construction, and the Real, being the occasional but inevitable failure of that reality, to develop his own distinction between failed unicity and feigned unicity. The Symbolic operates as an economy of interconnected and mutually-referential tropes weaving a kind of fabric that is the precondition for meaning, an environment in which social relationships can be understood in context. When the unified illusion of the social fails, we are compelled to stitch the tears in that fabric to maintain the world that gives us meaning (Lacan in Public 2-3). An account by Bill Laurence, the only journalist allowed to witness the Trinity test, provides evidence for this rupture and repair. While “not a sound could be heard” for the period after the flash and before the thunder, Laurence saw civilization itself collapse in an instant: The big boom came about one hundred seconds after the great flash—the first cry of a newborn world. It brought the silent, motionless silhouettes to life, gave them a voice. A loud cry filled the air. The little groups that had hitherto stood rooted to the earth like desert plants broke into a dance—the rhythm of primitive man dancing at one of his fire festivals at the coming of spring. They clapped their hands as they leaped from the ground…The dance of the primitive man lasted but a few seconds, during which an evolutionary period of about 10,000 years telescoped. Primitive man was metamorphosed into modern man—shaking hands, slapping his fellow on the back, all laughing like happy children. (12)

#### The 1AC is an ideological fantasy constructed by relentless planning at the expense of scapegoated identities, all for recognition from the Other in an attempt to fill the lack.

Gunder 05 Michael Gunder, 2005, “The Production of Desirous Space: Mere Fantasies of the Utopian City?” Planning Theory 2005 4: 173, DOI: 10.1177/1473095205054604, all brackets were in the original text, SJBE

Jouissance is one of the four structuring elements of social discourse,4 or social interactions, links and relationships, where synchronic language meets diachronic speech to evoke an effect on the Other (Lacan, 2004: 3). Zupancic (2004) associates Lacan’s (2004) theory of the Four Discourses (see Gunder, 2003a, 2004; Hillier and Gunder, 2005) with the Marxian theory of commodification and surplus-value via Lacan’s concept of surplus-enjoyment (plus-de-jouir). Lacan (2004: 111) contends that surplusvalue and surplus-enjoyment are historically equivalent, especially in the situation of the Master’s injunction of ‘No!’ in the emerging early phase of Calvinistic repressive capitalism. In contrast to the historical authority and rationality of the Master’s repressive command, late capitalism is structured under a rationality of the university or bureaucracy. Now knowledge and technology, not the Master’s injunction, become ‘agency expressing a logic of governmentality and expertise (including that of planning) that does not prohibit enjoyment, but rather channels jouissance in ways that produces a “bio-politics” (after Foucault) of an alienated subject that has no option, but to enjoy and be satisfied’ (Hillier and Gunder, 2005; McGowan, 2004; Zˇ izˇek, 2004b; Zupancic, 2004). In this regard, ‘a nation exists only as long as its specific enjoyment continues to be materialised in a set of social practices and submitted through national myths [or fantasies] that structure these practices’ (Zˇ izˇek, 1993: 202). This is taken further by the barely challenged international hegemonic discourse of global capitalization and the fantasies it induces in externally structuring the nation state’s very enjoyment (Stavrakakis, 2003a: 63; Zˇ izˇek, 2004b: 61). Even the ruling British Labour government, with its ‘Third Way’, in contrast to its tradition of socialism, has placed ‘economic globalisation’ as ‘the most significant factor in shaping Labour Party thinking since the early 1990s’ (Allmendinger, 2003: 326). As McGowan (2004) observes: we trust fully in the staying power of global capitalism. The alternatives, which once seemed to be just around the corner, have become unimaginable today. The universe of global capitalism is, or so we think, here to stay, and we best not do anything to risk our status within it. Hence, we pledge our allegiance to it, and we put our trust in it. This is the fundamental mode of contemporary obedience to authority. Only by coming to understand this obedience to the dictates of global capitalism as obedience can we hope to break out of it. Global capitalism seems an unsurpassable horizon simply because we have not properly recognized our own investment in sustaining it. We see it as unsurpassable because we don’t want to lose it – and the imaginary satisfaction that it provides. (McGowan, 2004: 193) Illusion resides under this global fantasy of capital where ‘the basic feature of’ this dominant cultural imperative ‘no longer operates on the level of ideals and identifications, but directly on the level of regulating jouissance’ (Zˇ izˇek, 2004b: 113). Even in Lefebvre’s day, this was a capitalism where surplus-value was synonymous with surplus-enjoyment supporting the injunction: ‘you must enjoy!’. In this light, the role of planning is to facilitate enjoyment by sustainably providing the correct space – healthy, competitive, fit and attractive – where enjoyment can be effectively materialized and maximized under the imperative of global capitalism. Consequently: urbanism is nothing more than an ideology that claims to be either ‘art’ or ‘technology’ or ‘science’, depending on the context. This ideology pretends to be straightforward, yet it obfuscates, harbours things unsaid: which it covers, which it contains, as a form of will tending towards efficiency. Urbanism is doubly fetishistic. First, it implies the fetishism of satisfaction. What about vested interests? They must be satisfied, and therefore their needs must be understood and catered to, unchanged . . . Second, it implies the fetishism of space. Space is creation. Whoever creates space creates whatever it is that fills space. The place engenders the thing and the good place engenders good things. (Lefebvre, 2003: 159) This is exacerbated further in the current milieu of consumerist post-democracy personified by the master signifier: global capitalism. ‘Post-democracy is founded on an attempt to exclude the political awareness of lack and negativity from the political domain, leading to a political order which retains the token institutions of liberal democracy but neutralizes the centrality of political antagonism’ (Stavrakakis, 2003a: 59). In response to the dominant ‘logic’ of global competitiveness, the technocrats and experts including planners, shape, contextualize and implement public policy in the interest of the dominant hegemonic bloc. This is constructed under the logics and knowledges of university discourses (see Gunder, 2004), with an objective to remove existing or potential urban blight,‘dis-ease’ and dysfunction detracting from local enjoyment and global competitiveness (Gunder, 2005; McGuirk, 2004). Of course, the hegemonic network, or bloc, initially shapes the debate as to what constitutes desired enjoyment and what is lacking in urban competitiveness. In turn, this defines what is blighted and dysfunctional and in need of planning remedy. This is predicated on a logic, or more accurately a rhetoric, that a lack of a particular defined type of enjoyment, or competitiveness, is inherently unhealthy for the aggregate social body. Planners, programmers, and users want solutions. For what? To make people happy. To order them to be happy. It is a strange way of interpreting happiness. The science of the urban phenomenon cannot respond to these demands without the risk of validating external restrictions imposed by ideology and power. (Lefebvre, 2003: 141) Yet this lack and its resolution are more often technical in nature, rather than political. As a consequence, the technocrats in partnership with their ‘dominant stakeholders’ can ensure the impression of happiness for the many, while, not to mention, achieving the stakeholders’ specific interests. Material happiness for all but that evil other Lacanian theory suggests that a subject’s jouissance is given freest rein when an act of desire contains a dimension of transgression. It is the ‘little sin’ that gives the most pleasure; it is the prohibition as such which elevates a common everyday object into an object of desire (Zˇ izˇek, 2004b: 177). The bio-politics of contemporary planning are predicated on enjoyment – you will enjoy! – not the prior duality of repression/freedom of the Weberian capitalist master’s injunction: ‘No you cannot do that!’. The achievements of traditional utopian goals were ones of freedom to act against the repression of the negative injunction. Contemporary injunctions are to enjoy – or at least to sustain our happiness – regardless of what we actually desire. Happiness is not a class of truth, but one of an ontological class of being where: ‘happiness’ relies on the subject’s inability or unreadiness fully to confront the consequences of its desire: the price of happiness is that the subject remains stuck in the inconsistency of its desires. In our daily lives, we (pretend to) desire things which we do not really desire, so that, ultimately, the worst thing that can happen is for us to get what we ‘officially’ desire. Happiness is thus hypocritical: it is the happiness dreaming about things we do not really want. (Zˇ izˇek, 2002a: 59–60) Planning continues to succeed because it underpins the primal desire of most subjects in society for a conflict-free, safe and assured happy future, even if it can only deliver this as a fantasy-scenario of material happiness, rather than as an impossible reality that actually sates all desires (Gunder, 2003a, 2003b). This is a fantasy predicated on an obedience to a shallow consumptive quantitative imperative to be materially happy, which often occurs at the expense of our actual qualitative psychic desires. In our contemporary global society the ‘moral law’ is no longer the imperative that acts as a limitation, stopping us from enjoying too much. Instead, the cultural imperative, the now dominant moral Law itself, in its injunction for us to enjoy becomes ‘the ultimate “transgression”’ should one wish to pursue a life of moderation (Zˇ izˇek, 2004b: 174). Further, ‘the fantasy of a utopian harmonious social world can only be sustained if all the persisting disorders can be attributed to an alien intruder . . . a certain particularity which cannot be assimilated, but instead must be eliminated’ (Stavrakakis, 1999: 108). This is the stranger, the Other that is not us that can act as the ‘“scapegoat” to be stigmatised as the one who is blamed for our lack, the Evil force that stole our precious jouissance’ and stopped the fantasy from achieving its utopian vision (Stavrakakis, 2003a: 58). Even our ‘“complex” contemporary societies rely on the basic divide between included and excluded’ (Zˇ izˇek, 2004b: 86). Zˇ izˇek (2004b: 86) continues: in any society ‘there is a multitude within the system and a multitude of those excluded, and simply to encompass them both within the scope of the same notion amounts to the same obscenity as equating starvation with dieting.’ It is continually this Other that permits the delusion of harmony in our identity defining groups and for this to transpire we require an Other, external to the group for the group to define itself. We require a disparity, or gap, to allocate a degree of difference to an Other to conceptualize the group identification as who we are not and on this Other we can attribute all the signs of disharmony that jeopardize our shared fantasy (Zˇ izˇek, 1997: 5). Difference is essential to complete our fantasy of harmony, but only by providing the sacrificial Other on which we can blame the disappointment of the fantasy to deliver (Zˇ izˇek, 2004a: 158–9). In this light, planning,‘as part of the apparatus of the modern state, makes its own imprint, has its own powers for good and evil’ (Sandercock, 2004: 134). This is especially so as planning identifies, or at least names and legitimizes, what constitutes an urban pathology that detracts from what is desirous of the globally competitive city. Planning then sets out to remedy this lack or deficiency. Civil society, i.e. the public stage, and media of information dissemination are central to this process. Of course, our media are not ideologically neutral. As a consequence, media access for putting forth particular tropes of desire constitutes a central component of social, as well as economic, capital. This is well documented by Flyvbjerg (1998a) where the Aalborg Chamber of Commerce controlled the editorial content of the local newspaper. This argument is central to that of Chomsky’s (2003) multinational corporate steering of mass media content in the, so-called, ‘free’ press. This is where the mass media are free to publish almost anything, provided, of course, they do not alienate their corporate clients who provide their majority of income and profits via their advertising payments. Gunder (2003b) documented how planning actors and their affiliated partners gained public agreement via the rhetorical use of culturally shared ‘master signifiers’ and their related metonymies and metaphors. Here each signifier was linked to associations in the public’s unconscious that induced a conscious expression of desire for a particular set of values or specific consequential actions. Effective deployment of rhetorical tropes can seduce subjects ‘to relinquish previous desires (including identifications and embrace new ones) – or alternatively, to invest all the more completely in old ones’ (Bracher, 1993: 51–2). For example, does anyone wish to live in a city that is losing enjoyment to other locations because it lacks the fitness to compete? In Lacan, the construction of reality is continuous with the field of desire. Desire and reality are intimately connected . . . The nature of their link can only be revealed in fantasy . . . when harmony is not present it has to be somehow introduced in order for our reality to be coherent. It has to be introduced through a fantasmatic social construction. (Stavrakakis, 1999: 62–3) This is where, from a Lacanian outlook, by accepting rationalization as the means to fulfil a desire for completeness – via the utilization of falsifying words – ‘man does not adapt himself to reality; he adapts reality to himself’ (Roudinesco, 1997: 114). Ideological fantasies as to what constitutes an enjoyable and satisfying city are deployed to hide the dysfunctions and unpredictabilities that are ubiquitous throughout all social spheres, particularly for those lacking in sufficient capital to offset adversity. Social reality ‘is sustained by the “as if”, the fantasy of what things are like’ (Dean, 2001: 627). Rationalization, or realrationalität as Flyvbjerg (1998a) calls it, exists between the everyday activities of social life and the held universal ideals or values of what ought to be, even if it is not so, in social reality. The belief that planning is not political, but technical ‘allows the myths of objectivity, value neutrality, and technical reason to persist, and thereby fosters a certain delusion about planning practice’ (Sandercock, 2004: 134). Sandercock (2004: 134) continues: planning ‘helps to redefine political debate, producing new sources of power and legitimacy, changing the force field in which we operate’. Lefebvre suggests that planning is based on a strategy of mixing scientificity and rationality with ideology. ‘Here, as elsewhere, scientificity is an ideology, an excrescence grafted onto real, but fragmentary, knowledge’ (Lefebvre, 2003: 166). In particular, Lefebvre argues that quantitative expertise including the technology of urban planning is largely a myth. This is because planning administrators: and bad administrators at that, rarely use much actual technology. However, they have the ability to persuade the people as a whole that because these are technological decisions they should be accepted. In other words, a large part of Lefebvre’s criticism [of planners] is not that technocrats are technocrats, but that they are precisely the opposite. Technology should be put to the service of everyday life, of social life rather than being precisely the condition of its suppression and control. Urbanism, for example, is an ideology that operates under the cover of this myth of technology. (Elden, 2004: 145) Social reality can only exist in the symbolic and imaginary registries as it is composed, that is constructed, as a ‘result of a certain historically specific set of discursive practices and power mechanisms’ (Zˇ izˇek, 2001: 66). Flyvbjerg (1998a) illustrates this well in his exposé of the Aalborg Chamber of Commerce’s intervention in that city’s planning process. Here this grouping of dominant business people is given hegemonic voice to determine what constitutes acceptable transportation modes and spatial development in Aalborg’s town centre. In this example the planner’s technical facts, by themselves, produced the weaker argument. This was perhaps because the dissemination of these facts and their implications for planning action were ineffectively articulated to the public, if at all, via the local information media controlled by the Chamber of Commerce. In contrast, in Sydney, McGuirk (2004) documented how planners actively participated in and facilitated the dominant network of actors successfully pushing for a series of local, regional and national policies supporting Sydney’s global competitiveness. It appeared to be of little consequence that these policies induced adverse effects on the rest of the country, not to mention many of Sydney’s residents. Not dissimilarly, the Auckland case cited in the introduction illustrates how the planners actively consulted the dominant commercial stakeholders in developing their growth strategy, yet failed to have direct consultation with the Region’s actual residents (ARGF, 1999; Gunder, 2003a). Planners and their governance forum of dominant stakeholders appeared to inherently know what is in the best interests of their region’s residents. Planning as agonistic ethics Notwithstanding the ‘full rendering of the antagonisms which traverse our society, we indulge in the notion of society as an organic whole, kept together by forces of solidarity and co-operation’ (Zˇ izˇek, 1997: 6). Planning is one such instrument that shapes and justifies the governing ideals of utopian desire and in this ‘sphere, the fantasmatic ideal of harmony is dominant’ (Stavrakakis, 1999: 110). The subtle and not so subtle application of power defines truth, reason and rationality and this particularly comprises the deployment of power in our planning and related practices (Flyvbjerg, 1998a). Moreover, a Lacanian line of reasoning about knowledge and truth indicates that the constituting components of these induced fantasies of truth and rationality are mediated on the wants and needs of actors with the capacity to inflict their desires and wants on the Other and, as if, these desires belong to those who have been imposed on. This is via assertions of unquestionable ‘truth’, which are often supported and empowered by selected ‘distorted’ knowledge, practices and language put forward by their ideological supporters, employed professional experts and controlled media. Further, in this light traditional Kantian and related enlightenment ‘ethics is nothing more than a convenient tool for any ideology that tries to pass off its own commandments as authentic, spontaneous, and “honorable” inclinations of the subject’ (Zupancic, 1998: 41). In contrast to traditional ethics, Lacan’s (1992) theorizing may provide an alternative way to develop new values beyond those already constituted by society as traditional morals of good or evil shaping acceptable behaviours. Traditional ethics is predicated on a reality principle as to what is possible without transgression in social reality. As Zupancic (2003: 77) observes, this ‘reality principle itself is ideologically mediated; one could even claim that it constitutes the highest form of ideology, the ideology that presents itself as empirical factor or (biological, economic . . .) necessity.’ This ‘beyond good or evil’ does not have to lead to postmodern nihilism, rather Lacan lays a groundwork for an ethics of the Real, where through acknowledgement of this Real that we cannot know or articulate we can establish new ‘truths’ in relationship to the ‘good’ (Stavrakakis, 2003b; Zupancic, 2000, 2003). This is through a mechanism of ethical sublimation where we create ‘a certain space, scene, or “stage” that enables us to value something that is situated beyond the reality principle, as well as beyond the principle of common good’ (Zupancic, 2003: 78). It is the space, or stage, created when the planner, or other actor, makes the ethical decision to recommend an action or permission that is contrary to existing regulations, precedence, professional expectations, or cultural imperatives. This is perhaps because somehow for the planner, perhaps simply driven by strong feelings, the ‘correct’ and expected action is perceived as not being the right thing to do. From the Lacanian perspective of the ethics of the Real, to make the sensed wrong into a rightness is the ethically correct task, even if this requires the agent to act against what he/she thinks society expects of that actor. This act of transcending the reality principle, and being true to the actor’s desires,5 makes possible a new good, a new potential, it changes the rules as to what is possible (Gunder and Hillier, 2004: 230). ‘The ethical, then, is the constellation of events in which the subject frees herself from the symbolic law (“freedom”), commits herself to an act (“agency”), and thereby makes it possible for the law to be rethought’ (Kay, 2003: 109). The ethical ‘act is an “excessive”, trans-strategic intervention which redefines the rules and contours of the existing order’ (Zˇ izˇek, 2004b: 81). Viewed from this perspective, Kant’s categorical imperative must be rethought itself as purely transgressive: the ethical act proper is a transgression of the legal norm – a transgression which, in contrast to a simple criminal violation, does not simply violate the legal norm, but redefines what is a legal norm. The moral law does not follow the Good – it generates a new shape of what counts as ‘Good’. (Zˇ izˇek, 2001: 170) This is a transgression that introduces new spaces for what can be considered ‘good’ and hence a wider space for jouissance, beyond that of mere technically produced materialist satisfaction. Of course, a key question becomes: how can a credible planner, or other actor, transcend the accepted norms and expectations of a society to create a new space for a new concept of ‘good’? Further, how can one effectively and reasonably mobilize such an ethics of the Real in everyday life when it is so contrary to the consensual instrumental rationality of the modern project and its ready-made solutions, that are, arguably planning’s purpose and foundations? Planning theorists (e.g. Gunder and Hillier, 2004; Pløger, 2004) and researchers in other disciplines (e.g. Mouffe, 1999, 2000; Stavrakakis, 2003a; Thrift, 2004a, 2004b) are currently attempting to address these complex issues that essentially require new insight and perhaps even profound change in our very relationships towards social reality, itself. Further, they are attempting to do so in a manner that does not simply impose a new intransigent set of ideals to replace our late-modern cultural imperatives, but rather to encourage diverse opportunities for multiple opening in which imminence may continually occur (after Deleuze). Coherent and implementable means to achieve this desired state are yet to emerge as new knowledges and practices, if they can ever do so. Yet, this author suggests that mere awareness and articulation of the impossible implications that the Lacanian Real has on traditional rationality are perhaps one of many points of commencement. Of course, this discourse also may fall into the trap leading to transcendental idealism, i.e. a process of identifying a lack, or void, in our knowledge and practices and then presenting a hegemonic solution that must be implemented, regardless of effect and affect! This author suggests that to change social reality, to begin to question and where necessary traverse our norms and laws, while avoiding the imperative of idealism, calls for a return to agonism that reawakens the political awareness of lack and negativity in place of the technical injunction: you will enjoy! This permits a space for an inclusive acceptance of strife or agonism that does not exclude the Others’ voice attempting to articulate their desires and wants in response to the ‘irreducibility of the Real’ (Stavrakakis, 2003b: 331). Rather this re-politicization of the planning problematic from that of the technical, quantified, solution is one that values Lacan’s Real and Lefebvre’s lived space by making the ‘key “jump from quantity to quality”, from antagonisms subordinated to differences to the predominant role of antagonism’ as pure agonism (Zˇ izˇek, 2004b: 92). In Lefebvre’s city ‘unconscious desires and passions lay dormant, dormant beneath the surface of the real, within the surreal . . . waiting for . . . the day they can be realized in actual conscious life’ (Merrifield, 2000: 178). In this regard, rather than continuing to fill the lack generating the urban problematic and produce a largely phallic enjoyment, Stavrakakis (2003b: 332) reminds us that in Lacan’s later teachings he spoke of another form ‘of jouissance – female or feminine jouissance – which values this lack per se as something that entails a different kind of enjoyment.’ Perhaps this feminine jouissance may be more appropriate to politicize the needs and wants of lived space. Yet, to do so would require a politics that acknowledges the impossibility of the Lacanian Real. In contrast to the notion that what is meant by an utopia is an imagined ‘ideal society; what characterizes utopia is literally the construction of a u-topic space, a social space outside the existing parameters, the parameters of what appears to be “possible” in the existing social universe’ (Zˇ izˇek, 2004b: 123). This proposed utopia is one that may permit, at least aspects of Lefebvre’s ‘lived space’ of the qualitative to be both visible and articulated in conscious life. Rather than contestant cities and regions competing globally under one cultural imperative to attract and retain finite capital and resources via one ‘logic’ and vision, this article calls for a planning ethos that encourages diverse groups within cities and regions to actively contest their perspectives and desires without threat of exclusion. To achieve such a state requires planning ‘to find ways of working with agonism without automatically recurring to procedures, voting, representativity, forced consensus or compromises’ that inherently exclude (Pløger, 2004: 87). This requires a planning ethos predicated on a central awareness of the irreducible Real. This is an understanding that any forced resolution always excludes a remainder, what cannot be articulated or perceived. Further, this remainder will continue to have unconscious effect in terms of what drives our materialized actions. This suggests an overt democratic planning process, representative of a society that is explicitly and overtly hegemonic for all participants, not tacitly hegemonic in its privileging of specific groups with access to power and technocratic justification that is constituted under a logic implicitly desiring social order (Critchley, cited in Zˇ izˇek, 2004b: 95). This is in contrast to the existing social reality, where political processes, such as planning, appear to strive for public participation culminating in an harmonious public consensus, when of course this is but an ideological foil that excludes in the name of a ‘general interest’ defined by a privileged few and legitimized by technocratic ‘reason’. In contrast, a strong society ‘places conflict and power at its centre’ by guaranteeing the very ‘existence of conflict’ (Flyvbjerg, 1998b: 229). Our current dominating fantasy of harmony is sustained by the illusion of continued consumer abundance produced and brought by the cornucopia of global capitalism, at least for the first world. This enjoyment of global capitalism ‘constitutes a (partial) reality with hegemonic appeal, a horizon sustained by the hegemony of an administration of desire with seemingly unlimited resources’ (Stavrakakis, 2003a: 61). Of course, resources and global carrying capacities are axiomatically finite. So perhaps must be our desires, for they can never be sated. Traversing our fundamental fantasy for harmony: a start, not a conclusion! Lacan and his followers, such as Stavrakakis, Zˇ izˇek or Zupancic, produce valid arguments for a psychoanalytically derived philosophy of reality and ideology ‘capable of theorizing the ways our deepest commitments bind us to practices of domination’ (Dean, 2001: 627). Revealing and transversing the ideological constructs that shape and structure our social reality is inadequate in itself as a mere academic critical exercise of knowledge production. This author argues that we must radically challenge our underlying beliefs for ourselves, and, in particular, not externalize them to ‘larger cultural practices and technologies’ so that hegemonic networks, or partnerships, of dominant actors, including intellectuals and bureaucratic professionals, can do our believing and desiring for us through planning and related diverse agencies of social guidance (Dean, 2001: 628). To do so we must traverse our fundamental fantasies that seek harmony and security. This article’s application of Lacan, augmented with some of Lefebvre’s urban insights, gives us a combination of Freudian and Marxist thought that is considerably at odds to that conjured up by the Frankfurt School’s vision of society as ‘a liberated collective culture’ with little space for the individual histories of unique subjects (Jameson, 2003: 8). The latter is the School, or project, drawing on Marx and Freud, which eventually created the Habermasian product of communicative rationality. This is a rationality that sought as its seldom if ever achieved ideal, to produce undistorted (ideologically free) speech acts ‘based on recognition of the corresponding validity claims of comprehensiveness, truth, truthfulness, and rightness’ constituting a basis for consensually agreement as to how we should act (Habermas, 1979: 3). Yet, as Hillier (2003) illustrates, this is an ideal of undistorted speech that is an impossibility because of the Lacanian Real and the incompleteness it always induces in language, not to mention the impossibility of absolute truth. Yet, this author would agree with Habermas’ call for the supremacy of discourse over mere technical reason. Habermas’ last two validity claims of truthfulness to our desires and the need to act in regard of what our unconscious feeling says is rightness, even if this sense is perhaps not readily justifiable with symbolic knowledge and reasoned argument, should be given due regard through our discourses. In contrast to Habermas’ validity claims of truth and comprehensiveness, Lacan’s theorizing suggests a much more fundamental contextualization of urban ideology based on the fantasies we construct to paper over the lack induced by the Real. This is a perspective that situates our very social reality, including space and social interaction, as principally constituted and composed of ideological fantasy constructs, misrecognitions and misunderstandings (see Hillier, 2003). As Jameson (2003: 37–8) observes, we owe to Lacan ‘the first new and as yet insufficiently developed concept of the nature of ideology since Marx’. Drawing on Althusser, Jameson (2003: 37–8) continues that ideology is ‘the “representation” of the Imaginary relationships of individuals to their Real conditions of existence’, so that ‘the individual subject invents a “lived” relationship with collective systems.’ This is a symbolic, materialized, relationship of practices and rituals (Krips, 2003: 149). Here, it is the desire of this Other that we fundamentally seek and wish to please as we constantly strive to return to our idealized primordial desire for infant maternal security and contentment (Hillier and Gunder, 2005). So we construct and share illusions and fantasies – ideologies – that we are somehow achieving this impossible task. It is the aggregate of these Others, and the illusions we generate about them and ourselves, that constitutes the social reality that is our lived space.

#### The repetition of drives makes life the enemy and causes extinction

Themi 08 (Tim, Prof @ Deakin U, “How Lacan’s Ethics Might Improve Our Understanding of Nietzsche’s Critique of Platonism: The Neurosis & Nihilism of a ‘Life’ Against Life,” *Cosmos and History: The Journal of Natural and Social Philosophy* 4.1-2, 2008) SJBE, recut from Harvard BoSu

For to circle in too close to the Thing which is ethically forbidden by our reality principles––yet too the real truth of much desire––does hardly give us pleasure at all but anguish of the heaviest kind. Even if done so only as a thought experiment; as a free-association. So go there we generally don’t, and our ‘realities’ reflect as much. But henceforth when desire builds up, damns and flares return of the Thing: this is how Lacan specifically characterises the move we might make that goes beyond the pleasure principle, whose other name for Freud is ‘death-drive’. There where there is no, not pleasure yet jouissance in the transgression that the Thing would bring, a jouissance of transgression which Lacan suggests is the most direct satisfaction of a drive humanly possible[48]. But it’s also one perhaps unconsciously masochistic, that which Freud writes up as being only preliminarily sadistic, in eventually expressing itself as an “unconscious need for punishment”[49]. And if indeed we are feeling guilty, then we may yet still seek to pay the price. Why? For unknowingly possessing and inadvertently re-accessing this Thing in our real, beyond the pleasure-reality principle, our moral transgressions casting shadow long into the unconscious we know next to nothing about, and refuse even to acknowledge.¶ Could it not be thusly then that our time is behind now a sadomasochistic, wilfully ignorant drive towards death for nigh the entire species? Such punishment would too overly suffice, to be sure, for even a two-millennium length in repression…¶ But with our advancements in technological power outmatching by far any correlative advance in the awareness gained as a whole of our prehistoric Thing within: the great 21st century ecological disaster that too many academics and activists now increasingly predict, seems more than just a little possible. But to this increasingly macabre scenario, we must also add the renewed proliferation of nuclear weapons which occurs, no less, amidst a world where vital resources for energy and democracy are wearing thin[50]. For just such reasons, wilful ignorance of the Thing now bares results which Lacan’s Ethics reveals as far too terrifyingly possible to rationally accept; given that we have the Thing armed to the teeth now from that primitive id-like part of the brain, with no Sovereign Good, and all the way into a nuclear age.¶ CONCLUSION: THE NEUROSIS & NIHILISM OF A ‘LIFE’ AGAINST LIFE.¶ This is why Lacan proposes that his enquiry into ethics must be one to go “more deeply into the notion of the real”(LE:11). Further into what he would rather call the real, given that previous notions of ‘nature’ have been too far ‘different’––from being far too Platonic––than his own; and because it’s the very exclusions in these previous notions which upon return, as return of excess, are yielding our most tragic problems.¶ Today when faced with problems of the magnitude of global warming––a special but by no means solo case of adverse environment change at present due to our physical treatment of the planet––we often think the answer is to be more moral, more good, and we are thankful when exponents of the Good in some way bring attention to the problem. However, the idea of the Good as introduced by Plato, and nigh all of its descendants whether secular, rationalist, religious or not, continue to predicate themselves on a radically false picture of the human-condition: if not still of the entire cosmos––which only then lines itself up aside of an age-old repression, a repression of das Ding, that Freudian Thing in our inner real which, when it returns after being disavowed and denied in the name of the Good too long, is even more devastating.¶ Presently we are accelerating along the path of what Lacan discloses as our civilisation’s “race towards destruction”, a “massive destruction”, “a resurgence of savagery”, snaking the paths traced out before us by the centuries long dominion of Western morality [51]; and the nihilism detected by Nietzsche before the turn of the 20th has never threatened to reach such the grand finale. But what I would have us take from this enquiry here is that this is not because we aren’t in accordance enough with a moral ideal of the Sovereign good, but rather, it’s because we aren’t in accordance enough with a proper understanding of the real. It’s because we still at some level think that being more moral, in accordance with the Good’s inherited repressive structures towards our drives, desire, and truthfulness about the real, is actually the answer to––rather than the source of––our most tragic problems.¶ The goal here is by no means then to encourage all to let their Things run wild––which would probably be nothing short of an instant conflagration––but this is why and precisely why we must desist from deluding ourselves under the tightening grip of a Sovereign Good, for this is precisely the move which cuts the Thing loose after pressing down for far too long, a slippery hand’s palming on the coils of a spring, forever readying the subsequent explosion. For when that which is really real––as opposed to what Christian-Platonism falsely called the ‘real’––is forced from mind, it can’t really disappear because it is real, and it tends to end up only in our gun-sights as an imaginary overlaying of an external other, when the signifier ‘enmity’ appears. The earth itself can even seem like the enemy after while, one which like Plato in his Phaedo, we might think then to escape from “as if from a prison”, and especially from “the bonds of the body”, in the hope that we may live one day without the earthly altogether[52]. Following such negations to their logical conclusion, life itself becomes enemy too, for as being made up of the earthly and organic, life could never be free of what it is in essence. And what is the death-drive Freud tells from the start, if not to return us sundry to that dust-bowl of the inorganic; as per that “second death”[53] fantasm Lacan salvages from the Monstre de Sade, which wills to go beyond the destruction of mere beings, by destroying too the principle from which fresh sets could emerge. Such negative devaluations of our earthly, organic life though are really of our own construction: as de Sade, like any pervert, is only the mirror which shows expressed what Platonic-neurotics are but hide inside––a cess-pit of loathing contempt for life, built up from the unconscious and disowned, distorted and damned up, built up, instinctual-ideational elements of their own subjective psyches, phobically ferocious of that Thingly real lying not so dormant, and readying within…¶ But is it now still possible as Nietzsche teaches to say ‘Yes’ to the real of nature both without and within––to return to it!––even though it is more frightful and we are less guaranteed protection of it than the Platonic history of metaphysicians taught? For with the further disclosures of The Ethics of Psychoanalysis––Lacan’s following up and extension of the meta-ethical implications of Freud: perhaps even Nietzsche, our great intellectual übermensch, may too have bitten off more snake-head than he could chew? From certain moments in Nietzsche’s texts we can perhaps interpret that he may have had this Thing in his sights, but saw nothing much to come of it, so instead, elected to turn away, though not without some perhaps hinted at self-amusement.[54]¶ But with psychoanalysis, rightly or wrongly, such truths are out. It doesn’t seem all positive at first, and perhaps it never entirely will. But we must not let this deeper disclosure desist us now from the core Nietzschean project of locating and overcoming the nihilism which begs us to take cover in idealising fictions, as if life as life is not worth living. Not because nihilism and the annihilation of the species is wrong in the sense of being immoral, but rather because it is bad art, mediocre art, and the ‘knowledge’ claims it trumpets on should only make us flare. If we are at our full intellectual and creative will to power, we can only consider such cultural-civil regressions as we saw on display with that whole propaganda comedy that surrounded the war for more oil in Iraq as infantile; the hapless results of sibling rivalries gone too far astray. But we must also resist being caught up in the imaginary of those who would only re-preach to us now of a return to the Good, who would only redeploy such versions of nihilism’s precursory defensive fictions, the pernicious ones, which would only then re-falsify our data, and leave us disappointed when the truth then re-emerges. Doing more harm than good does Platonism in the end by leaving us untrained for the real, with the habit instead to take some truth as ‘error’, and error as ‘truth’––as ‘real’––to the point even of epistemic dysfunction. Take the grotesque intellectual poverty of that whole Christian middle-ages for example, whence put into relation with the heights of Aristotle and his fellow Greeks, as Augustine and Aquinas amplified some of the worst bits of Platonism, and threw the rest into abyss.¶ The overcoming of the moralising good of Christian-Platonism though does by no means imply then a subsequent affirmation of all that brutal Roman like greed, slavery, decadence, circus-bread corruption and mindless colonial expansion that we’ve heard all about, and are hardly so free of with our corporate today––just ask a Latin-American for instance![55] For it is possible within the perspectives opened up by Nietzsche, Freud, Lacan, as Silvia Ons puts it, to view a social-historical or individual neurosis of any kind: including the expressed acted-out, perverse-sadistic form that escapes when the Good is temporarily loosed of its repressive grip––and say to the would be Platonist: ‘No, not that, that’s not a cure, that’s a mirage; that’s sheer fantasy, resentment, spite; that’s not a cure it will only make things worse; worse in a different way, but worse nonetheless!’¶ By greater mindfulness then, with guided affirmation towards even that fearsome Freudian Thing that The Ethics of Psychoanalysis has us find now in our inner natures: we can eventually again say ‘Yes’-to-life in such the way that it overcomes the nihilism of not caring too much whether we as individuals or species live or die, whether we as culture or civilisation advance or decline. But we can only do this with fullest efficacy by freeing ourselves of all that wasted neurosis sickness that feels it must deny our Thing like aspect of the real: because from all those Christian-Platonic prejudices of the Good, it has been taught that such ‘things’ are too far beneath it. We must continue instead to train ourselves to stare the real directly in the face, without flinching, and that’s all we can do at least to start. For unless we can continue to utilise, sublimate, enjoy and get a positive, well-guided jouissance out of all aspects of life––including that Freudian Ding in our real––then the chances are we’re going to be at least in part, happy enough in no longer living it: offering not even a puff of genuine political praxis! We either face up to the death-drive snaking long beneath the dank, hidden history of the un-real, anti-real Good of Platonism––or let the disowned, un-understood drive resurge of its own volition until it accidentally finishes us!

#### Vote negative to embrace the lack – this requires being open to the anxiety that occurs from an encounter with the other and breaks down fantasy and drives.

McGowan 13 Todd McGowan, 2013, “Enjoying What We Don’t Have: The Political Project of Psychoanalysis,” University of Nebraska Press/Lincoln and London, SJBE

The alternative — the ethical path that psychoanalysis identifies — demands an embrace of the anxiety that stems from the encounter with the enjoying other. If there is a certain ethical dimension to anxiety, it lies in the rela- tionship that exists between anxiety and enjoyment. Contra Heidegger, the ethics of anxiety does not stem from anxiety’s relation to absence but from its relation to presence — to the overwhelming presence of the other’s enjoyment. In some sense, the encounter with absence or nothing is easier than the encounter with presence. Even though it traumatizes us, absence allows us to constitute ourselves as desiring subjects. Rather than producing anxiety, absence leads the subject out of anxiety into desire. Confronted with the lost object as a structuring absence, the subject is able to embark on the pursuit of the enjoyment embodied by this object, and this pursuit provides the subject with a clear sense of direction and even meaning. This is precisely what the subject lacks when it does not encounter a lack in the symbolic structure. When the subject encounters enjoyment at the point where it should encounter the absence of enjoyment, anxiety overwhelms the subject. In this situation, the subject cannot constitute itself along the path of desire. It lacks the lack — the absence — that would provide the space through which desire could develop. Consequently, this subject confronts the enjoying other and experiences anxiety. Unlike the subject of desire — or the subject of Heideggerean anxiety — the subject who suffers this sort of anxiety actually experiences the other in its real dimension.¶ The real other is the other caught up in its obscene enjoyment, caught up in this enjoyment in a way that intrudes on the subject. There is no safe distance from this enjoyment, and one cannot simply avoid it. There is nowhere in the contemporary world to hide from it. As a result, the contem- porary subject is necessarily a subject haunted by anxiety triggered by the omnipresent enjoyment of the other. And yet, this enjoyment offers us an ethical possibility. As Slavoj Žižek puts it, “It is this excessive and intrusive jouissance that we should learn to tolerate.”27 When we tolerate the other’s “excessive and intrusive jouissance” and when we endure the anxiety that it produces, we acknowledge and sustain the other in its real dimension.¶ Tolerance is the ethical watchword of our epoch. However, the problem with contemporary tolerance is its insistence on tolerating the other only insofar as the other cedes its enjoyment and accepts the prevailing symbolic structure. That is to say, we readily tolerate the other in its symbolic dimen- sion, the other that plays by the rules of our game. This type of tolerance allows the subject to feel good about itself and to sustain its symbolic identity. The problem is that, at the same time, it destroys what is in the other more than the other — the particular way that the other enjoys.¶ It is only the encounter with the other in its real dimension — the encounter that produces anxiety in the subject — that sustains that which defines the other as such. Authentic tolerance tolerates the real other, not simply the other as mediated through a symbolic structure. In this sense, it involves the experience of anxiety on the part of the subject. This is a difficult posi- tion to sustain, as it involves enduring the “whole opaque weight of alien enjoyment on your chest.”The obscene enjoyment of the other bombards the authentically tolerant subject, but this subject does not retreat from the anxiety that this enjoyment produces. If the embrace of the anxiety that accompanies the other’s proximate enjoyment represents the ethical position today, this does not necessarily provide us with an incentive for occupying it. Who wants to be ethical when it involves enduring anxiety rather than finding a way — a drug, a new authority, or something — to alleviate it? What good does it do to sustain oneself in anxiety? In fact, anxiety does the subject no good at all, which is why it offers the subject the possibility of enjoyment. When the subject encounters the other’s enjoyment, this is the form that its own enjoyment takes as well. To endure the anxiety caused by the other’s enjoyment is to experience one’s own simultaneously. As Lacan points out, when it comes to the enjoyment of the other and my own enjoyment, “nothing indicates they are distinct.” Thus, not only is anxiety an ethical position, it is also the key to embracing the experience of enjoyment. To reject the experience of anxiety is to flee one’s own enjoyment.¶ The notion that the other’s enjoyment is also our own enjoyment seems at first glance difficult to accept. Few people enjoy themselves when they hear someone else screaming profanities in the workplace or when they see a couple passionately kissing in public, to take just two examples. In these instances, we tend to recoil at the inappropriateness of the activity rather than enjoy it, and this reaction seems completely justified. The public display of enjoyment violates the social pact with its intrusiveness; it doesn’t let us alone but assaults our senses. It violates the implicit agreement of the public sphere constituted as an enjoyment-free zone. And yet, recoiling from the other’s enjoyment deprives us of our own.¶ How we comport ourselves in relation to the other’s enjoyment indi- cates our relationship to our own. What bothers us about the other — the disturbance that the other’s enjoyment creates in our existence — is our own mode of enjoying. If we did not derive enjoyment from the other’s enjoyment, witnessing it would not bother us psychically. We would sim- ply be indifferent to it and focused on our own concerns. Of course, we might ask an offending car radio listener to turn the radio down so that we wouldn’t have to hear the unwanted music, but we would not experience the mere exhibition of alien enjoyment through the playing of that music as an affront. The very fact that the other’s enjoyment captures our attention demonstrates our intimate — or extimate — relation to it. This relation becomes even clearer when we consider the epistemo- logical status of the enjoying other. Because the real or enjoying other is irreducible to any observable identity, we have no way of knowing whether or not the other really is enjoying. A stream of profanity may be the result of someone hurting a toe. The person playing the car radio too loud while sitting at the traffic light may have simply forgotten to turn down the radio after driving on the highway. Or the person may have difficulty hearing. The couple’s amorous behavior in public may reflect an absence of enjoyment in their relationship that they are trying to hide from both themselves and the public.¶ Considering the enjoyment of the other, we never know whether it is there or not. If we experience it, we do so through the lens of our own fantasy. We fantasize that the person blasting the radio is caught up in the enjoyment of the music to the exclusion of everything else; we fantasize that the public kisses of the couple suggest an enjoyment that has no concern for the outside world. Without the fantasy frame, the enjoying other would never appear within our experience.¶ The role of the fantasy frame for accessing the enjoying other becomes apparent within Fascist ideology. Fascism posits an internal enemy — the figure of the Jew or some analogue — that enjoys illicitly at the expense of the social body as a whole. By attempting to eliminate the enjoying other, Fascism hopes to create a pure social body bereft of any stain of enjoy- ment. This purity would allow for the ultimate enjoyment, but it would be completely licit. This hope for a future society free of any stain is not where Fascism’s true enjoyment lies, however. Fascists experience their own enjoyment through the enjoying other that they persecute. The enjoy- ment that the figure of the Jew embodies is the Fascists’ own enjoyment, though they cannot avow it as their own. More than any other social form, Fascism is founded on the disavowal of enjoyment — the attempt to enjoy while keeping enjoyment at arm’s length. But this effort is not confined to Fascism; it predominates everywhere, because no subjects anywhere can simply feel comfortable with their own mode of enjoying.¶ The very structure of enjoyment is such that we cannot experience it directly: when we experience enjoyment, we don’t have it; it has us. We experience our own enjoyment as an assault coming from the outside that dominates our conscious intentions. This is why we must fantasize our own enjoyment through the enjoying other. Compelled by our enjoyment, we can’t do otherwise; we act against our self-interest and against our own good. Enjoyment overwhelms the subject, even though the subject’s mode of enjoying marks what is most singular about the subject.¶ Even though the encounter with the enjoying other apprehends the real other through the apparatus of fantasy, this encounter is nonetheless genuine and has an ethical status. Unlike the experience of the nonexistent symbolic identity, which closes down the space in which the real other might appear, the fantasized encounter with the enjoying other leaves this space open. By allowing itself to be disturbed by the other on the level of fantasy, the subject acknowledges the singularity of the real other — its mode of enjoying — without confining this singularity to a prescribed identity.¶ The implications of privileging the encounter with the disturbing enjoy- ment of the real other over the assimilable symbolic identity are themselves disturbing. The tolerant attitude that never allows itself to be jarred by the enjoying other becomes, according to this way of seeing things, further from really encountering the real other than the attitude of hate and mis- trust. The liberal subject who welcomes illegal immigrants as fellow citizens completely shuts down the space for the other in the real. The immigrant as fellow citizen is not the real other. The xenophobic conservative, on the other hand, constructs a fantasy that envisions the illegal immigrant awash in a linguistic and cultural enjoyment that excludes natives. This fantasy, paradoxically, permits an encounter with the real other that liberal tolerance forecloses. Of course, xenophobes retreat from this encounter and from their own enjoyment, but they do have an experience of it that liberals do not. The tolerant liberal is open to the other but eliminates the otherness, while the xenophobic conservative is closed to the other but allows for the otherness. The ethical position thus involves sustaining the liberal’s toler- ance within the conservative’s encounter with the real other.

#### Form over content – a] their speech-act controls the way that we understand and interpret their framework, b] it shouldn’t matter how correct you are if you engaged in unethical practices along the way, both of these mean that you should evaluate the K as a side-constraint on how we view things like the affirmative framework.

## Case

### 1NC – Nuke War Good

#### Their ozone stuff doesn’t warrant extinction – just says it kills plants – at worst, it takes years to happen which transition solves

#### No extinction from Ozone.

Brian Martin 82 [Brian Martin (Professor of Social Sciences @ the University of Wollongong) December 1982 “The global health effects of nuclear war” Current Affairs Bulletin, Vol. 59, No. 7, pp. 14-26, online @ http://www.uow.edu.au/arts/sts/bmartin/pubs/82cab/index.html, loghry] Recut Justin

Another major threat to ozone comes from nuclear explosions. Nitric oxide is produced essentially by the 'burning' of nitrogen in the atmosphere, and this occurs whenever air temperatures are sufficiently hot: in automobile engines, in aircraft engines and in nuclear explosions. Studies of the creation of oxides of nitrogen by nuclear explosions were first undertaken as part of the SST debate, to determine whether the nuclear weapons tests in the 1950s and 1960s had reduced observed ozone levels.[28] It was only in 1974 that John Hampson made a point which had been overlooked, namely that large-scale nuclear war could cause a major and disastrous reduction in ozone levels.[29] Calculations made in the mid-1970s assuming large nuclear arsenals with many high-yield explosions concluded that reductions of ozone could reach 50 per cent or more in the northern hemisphere, with smaller reductions in the southern hemisphere.[30] But since the number of high-yield weapons in present nuclear arsenals is now smaller, much less oxides of nitrogen would be deposited in the stratosphere by nuclear war than assumed in earlier calculations, and so significant ozone reductions are unlikely.[31] This conclusion remains tentative. The actual behaviour of stratospheric ozone is quite complicated, involving many chemical compounds and numerous chemical reactions, the changing effects of temperature, the angle and intensity of sunlight, and the effect of air motions. Computer models of the effects of nuclear war on ozone are able to take into account only a part of this complexity, and new information about chemical reaction rates in particular have led in the past to periodic revisions in the calculated effects of added oxides of nitrogen. If significant ozone reduction did occur, the most important direct effect on humans would be an increase in skin cancer. However, this is seldom lethal, and could be avoided by reducing exposure to sunlight. Potentially more serious would be effects on crops.[32] Some of the important grains, for example, are sensitive to uv. Whether the net effects on crop yields would be significant is hard to estimate. But whatever the reduction in ozone, ozone levels would return pretty much to normal after a few years.[9] It seems unlikely that in the context of a major nuclear war the changes in uv alone would be of serious concern. In particular, the threat of human extinction raised by Jonathan Schell in The Fate of the Earth,[33] based mostly on effects of increased uv from ozone reduction, seems very small indeed. It is sometimes claimed that nuclear war could destroy ozone to such an extent that humans and animals would be blinded by excess uv. Even if large numbers of high-yield weapons were exploded, this possibility seems very unlikely except for a contribution to snow blindness in the far north. Stratospheric ozone can never be completely removed, but at most reduced greatly. Even if a 50 per cent or more reduction in ozone occurred - and as noted this seems improbable with present nuclear arsenals - protection from uv for humans could be obtained from sunglasses or just ordinary glasses, which absorb uv. For animals, the following considerations are relevant. Ozone levels vary considerably from place to place and from time to time, both seasonally and daily (sometimes by up to 50 per cent). Sunlight at the equator typically passes through only half as much ozone as at the mid-latitudes, yet animals at the equator are not known to go blind more often than elsewhere. Furthermore, most ozone reductions from a nuclear war would be in the mid and high latitudes, where ozone levels are higher to start with and where the 'path length' of sunlight through ozone is increased due to its oblique angle of incidence. But this does not mean complacency is warranted, as the concerns of John Hampson illustrate.

#### Nuclear war now spurs political will for disarmament without causing extinction.

Deudney 18 [Associate Professor of Political Science at Johns Hopkins University. 03/15/2018. “The Great Debate.” The Oxford Handbook of International Security. www.oxfordhandbooks.com, doi:10.1093/oxfordhb/9780198777854.013.22] Recut Justin

Although nuclear war is the oldest of these technogenic threats to civilization and human survival, and although important steps to restraint, particularly at the end of the Cold War, have been achieved, the nuclear world is increasingly changing in major ways, and in almost entirely dangerous directions. The third “bombs away” phase of the great debate on the nuclear-political question is more consequentially divided than in the first two phases. Even more ominously, most of the momentum lies with the forces that are pulling states toward nuclear-use, and with the radical actors bent on inflicting catastrophic damage on the leading states in the international system, particularly the United States. In contrast, the arms control project, although intellectually vibrant, is largely in retreat on the world political stage. The arms control settlement of the Cold War is unraveling, and the world public is more divided and distracted than ever. With the recent election of President Donald Trump, the United States, which has played such a dominant role in nuclear politics since its scientists invented these fiendish engines, now has an impulsive and uninformed leader, boding ill for nuclear restraint and effective crisis management. Given current trends, it is prudent to assume that sooner or later, and probably sooner, nuclear weapons will again be the used in war. But this bad news may contain a “silver lining” of good news. Unlike a general nuclear war that might have occurred during the Cold War, such a nuclear event now would probably not mark the end of civilization (or of humanity), due to the great reductions in nuclear forces achieved at the end of the Cold War. Furthermore, politics on “the day after” could have immense potential for positive change. The survivors would not be likely to envy the dead, but would surely have a greatly renewed resolution for “never again.” Such an event, completely unpredictable in its particulars, would unambiguously put the nuclear-political question back at the top of the world political agenda. It would unmistakeably remind leading states of their vulnerability It might also trigger more robust efforts to achieve the global regulation of nuclear capability. Like the bombings of Hiroshima and Nagasaki that did so much to catalyze the elevated concern for nuclear security in the early Cold War, and like the experience “at the brink” in the Cuban Missile Crisis of 1962, the now bubbling nuclear caldron holds the possibility of inaugurating a major period of institutional innovation and adjustment toward a fully “bombs away” future.

#### Can’t rebuild industrial civilization.

John Jacobi 17. [Leads an environmentalist research institute and collective, citing Fred Hoyle, British astronomer, formulated the theory of stellar nucleosynthesis, coined the term “big bang,” recipient of the Gold Medal of the Royal Astronomical Society, professor at the Institute of Astronomy, Cambridge University. 05-27-17. “Industrial Civilization Could Not Be Rebuilt.” The Wild Will Project. <https://www.wildwill.net/blog/2017/05/27/industrial-civilization-not-rebuilt/>] Recut Justin

A suggestion, for the sake of thought: If industrial civilization collapsed, it probably could not be rebuilt. Civilization would exist again, of course, but industry appears to be a one-time experiment. The astronomist Fred Hoyle, exaggerating slightly, writes: It has often been said that, if the human species fails to make a go of it here on Earth, some other species will take over the running. In the sense of developing high intelligence this is not correct. We have, or soon will have, exhausted the necessary physical prerequisites so far as this planet is concerned. With coal gone, oil gone, high-grade metallic ores gone, no species however competent can make the long climb from primitive conditions to high-level technology. This is a one-shot affair. If we fail, this planetary system fails so far as intelligence is concerned. The same will be true of other planetary systems. On each of them there will be one chance, and one chance only. Hoyle overstates all the limits we actually have to worry about, but there are enough to affirm his belief that industry is a “one-shot affair.” In other words, if industry collapsed then no matter how quickly scientific knowledge allows societies to progress, technical development will hit a wall because the builders will not have the needed materials. For example, much of the world’s land is not arable, and some of the land in use today is only productive because of industrial technics developed during the agricultural revolution in the 60s, technics heavily dependent on oil. Without the systems that sustain industrial agriculture much current farm land could not be farmed; agricultural civilizations cannot exist there, at least until the soil replenishes, if it replenishes. And some resources required for industrial progress, like coal, simply are not feasibly accessible anymore. Tainter writes: . . . major jumps in population, at around A.D. 1300, 1600, and in the late eighteenth century, each led to intensification in agriculture and industry. As the land in the late Middle Ages was increasingly deforested to provide fuel and agricultural space for a growing population, basic heating, cooking, and manufacturing needs could no longer be met by burning wood. A shift to reliance on coal began, gradually and with apparent reluctance. Coal was definitely a fuel source of secondary desirability, being more costly to obtain and distribute than wood, as well as being dirty and polluting. Coal was more restricted in its spatial distribution than wood, so that a whole new, costly distribution system had to be developed. Mining of coal from the ground was more costly than obtaining a quantity of wood equivalent in heating value, and became even more costly as the 54 most accessible reserves of this fuel were depleted. Mines had to be sunk ever deeper, until groundwater flooding became a serious problem. Today, most easily accessible natural coal reserves are completely depleted. Thus, societies in the wake of our imagined collapse would not be able to develop fast enough to reach the underground coal. As a result of these limits, rebuilding industry would take at least thousands of years — it took 10,000 years the first time around. By the time a civilization reached the point where it could do something about industrial scientific knowledge it probably would not have the knowledge anymore. It would have to develop its sciences and technologies on its own, resulting in patterns of development that would probably look similar to historical patterns. Technology today depends on levels of complexity that must proceed in chronological stages. Solar panels, for example, rely on transportation infrastructure, mining, and a regulated division of labor. And historically the process of developing into a global civilization includes numerous instances of technical regression. The natives of Tasmania, for example, went from a maritime society to one that didn’t fish, build boats, or make bows and arrows. Rebuilding civilization would also be a bad idea. Most, who are exploited by rather than benefit from industry, would probably not view a rebuilding project as desirable. Even today, though citizens of first-world nations live physically comfortable lives, their lives are sustained by the worse off lives of the rest of the world. “Civilization . . . has operated two ways,” Paine writes, “to make one part of society more affluent, and the other more wretched, than would have been the lot of either in a natural state.” Consider the case of two societies in New Zealand, the Maori and the Moriori. Both are now believed to have originated out of the same mainland society. Most stayed and became the Maori we know, and some who became the Moriori people settled on the Chatham Islands in the 16th century. Largely due to a chief named Nunuku-whenua, the Moriori had a strict tradition of solving inter-tribal conflict peacefully and advocating a variant of passive resistance; war, cannibalism, and killing were completely outlawed. They also renounced their parent society’s agricultural mode of subsistence, relying heavily on hunting and gathering, and they controlled their population growth by castrating some male infants, so their impact on the non-human environment around them was minimal. In the meantime, the Maori continued to live agriculturally and developed into a populated, complex, hierarchical, and violent society. Eventually an Australian seal-hunting ship informed the Maori of the Moriori’s existence, and the Maori sailed to the Chathams to explore: . . . over the course of the next few days, they killed hundreds of Moriori, cooked and ate many of the bodies, and enslaved all the others, killing most of them too over the next few years as it suited their whim. A Moriori survivor recalled, “[The Maori] commenced to kill us like sheep . . . [We] were terrified, fled to the bush, concealed ourselves in holes underground, and in any place to escape our enemies. It was of no avail; we were discovered and eaten – men, women, and children indiscriminately.” A Maori conqueror explains, “We took possession . . . in accordance with our customs and we caught all the people. Not one escaped. Some ran away from us, these we killed, and others we killed – but what of that? It was in accordance with our custom.” Furthermore, we can deduce from the ubiquitous slavery in all the so-called “great civilizations” like Rome or Egypt that any attempt to rebuild a similar civilization will involve slavery. And to rebuild industry, something similar to colonization and the Trans-Atlantic Slave Trade would probably have to occur once again. After all, global chattel slavery enabled the industrial revolution by financing it, extracting resources to be accumulated at sites of production, and exporting products through infrastructure that slavery helped sustain. So, if industrial society collapsed, who would be doing the rebuilding? Not anyone most people like. It is hard to get a man to willingly change his traditional way of life; even harder when his new life is going into mines. And though history demonstrates that acts like those of the Maori or slave traders are not beyond man’s will or ability, certainly most in industrial society today would not advocate going through the phases required to reach the industrial stage of development.

#### Empirics and worse disasters disprove.

Eken 17 [Mattias Eken – PhD student in Modern History at the University of St Andrews. “The understandable fear of nuclear weapons doesn’t match reality”. 3/14/17. <https://theconversation.com/the-understandable-fear-of-nuclear-weapons-doesnt-match-reality-73563>] Recut Justin

Nuclear weapons are unambiguously the most destructive weapons on the planet. Pound for pound, they are the most lethal weapons ever created, capable of killing millions. Millions live in fear that these weapons will be used again, with all the potential consequences. However, the destructive power of these weapons **has been vastly exaggerated**, albeit for good reasons. Public fear of nuclear weapons being used in anger, whether by terrorists or nuclear-armed nations, has risen once again in recent years. **This is** in no small part **thanks to the current political climate** between states such as the US and Russia and the various nuclear tests conducted by North Korea. But whenever we talk about nuclear weapons, it’s easy to get carried away with doomsday scenarios and apocalyptic language. As the historian Spencer Weart once argued: “**You say ‘nuclear bomb’ and everybody immediately thinks of the end of the world.**” Yet the means necessary to produce a nuclear bomb, let alone set one off, remain incredibly complex – and while the damage that would be done if someone did in fact detonate one might be very serious indeed, **the chances that it would mean “the end of the world” are vanishingly small**. In his 2013 book Command and Control, the author Eric Schlosser tried to scare us into perpetual fear of nuclear weapons by recounting stories of near misses and accidents involving nuclear weapons. One such event, the 1980 Damascus incident, saw a Titan II intercontinental ballistic missile explode at its remote Arkansas launch facility after a maintenance crew accidentally ruptured its fuel tank. Although the warhead involved in the incident didn’t detonate, Schlosser claims that “if it had, much of Arkansas would be gone”. But that’s not quite the case. The nine-megaton thermonuclear warhead on the **Titan II** missile had a blast radius of 10km, or an area of about 315km². The state of Arkansas spreads over 133,733km², meaning the weapon **would have caused destruction across 0.2% of the state.** That would naturally have been a terrible outcome, but certainly not the catastrophe that Schlosser evokes. Claims exaggerating the effects of nuclear weapons have become commonplace, especially after the September 11 terrorist attacks in 2001. In the early War on Terror years, Richard Lugar, a former US senator and chair of the Senate Foreign Relations Committee, argued that terrorists armed with nuclear weapons pose an existential threat to the Western way of life. What he failed to explain is how. It is by no means certain that a single nuclear detonation **(or even several)** would do away with our current way of life. Indeed, **we’re still here despite having nuked our own planet more than 2,000 times** – a tally expressed beautifully in this video by Japanese artist Isao Hashimoto). While the 1963 Limited Test Ban Treaty forced nuclear tests underground, **around 500 of** all **the nuclear weapons detonated were unleashed in the Earth’s atmosphere**. This includes the world’s largest ever nuclear detonation, the 57-megaton bomb known as **Tsar Bomba**, detonated by the Soviet Union on October 30 1961. Tsar Bomba was more than 3,000 times more powerful than the bomb dropped on Hiroshima. That is immense destructive power – but as one physicist explained, **it’s only “one-thousandth the force of an earthquake, one-thousandth the force of a hurricane”.** The Damascus incident proved how incredibly hard it is to set off a nuclear bomb and the limited effect that would have come from just one warhead detonating. Despite this, some scientists have controversially argued that an even limited all-out nuclear war might lead to a so-called nuclear winter, since the smoke and debris created by very large bombs could block out the sun’s rays for a considerable amount of time. To inflict such ecological societal annihilation with weapons alone, we would have to detonate hundreds if not thousands of thermonuclear devices in a short time. Even in such extreme conditions, the area actually devastated by the bombs would be limited: for example, **2,000 one-megaton explosions with a destructive radius of five miles each would directly destroy less than 5% of the territory of the US**. Of course, if the effects of nuclear weapons have been greatly exaggerated, there is a very good reason: since these weapons are indeed extremely dangerous, any posturing and exaggerating which intensifies our fear of them makes us less likely to use them. But it’s important, however, to understand why people have come to fear these weapons the way we do. After all, nuclear weapons are here to stay; they can’t be “un-invented”. If we want to live with them and mitigate the very real risks they pose, we must be honest about what those risks really are. Overegging them to frighten ourselves more than we need to keeps nobody safe.

#### Isolated island populations repopulate.

Turchin and Green 18 [Alexey Turchin – Scientist for the Foundation Science for Life Extension in Moscow, Russia, Founder of Digital Immortality Now, author of several books and articles on the topics of existential risks and life extension. Brian Patrick Green – Director of technology ethics at the Markkula Center for Applied Ethics, teaches AI ethics in the Graduate School of Engineering at Santa Clara University. <MKIM> “Islands as refuges for surviving global catastrophes”. September 2018. DOA: 7/20/19. <https://www.emerald.com/insight/content/doi/10.1108/FS-04-2018-0031/full/html?fullSc=1&mbSc=1&fullSc=1>] Recut Justin

Different types of possible catastrophes suggest different scenarios for how survival could happen on an island. What is important is that the island should have properties which protect against the specific dangers of particular global catastrophic risks. Specifically, different islands will provide protection against different risks, and their natural diversity will contribute to a higher total level of protection: **Quarantined island survives pandemic**. An island could impose effective quarantine if it is sufficiently remote and simultaneously able to protect itself, possibly using military ships and air defense. **Far northern aboriginal people survive an ice age**. Many far northern people have adapted to survive in extremely cold and dangerous environments, and under the right circumstances could potentially survive the return of an ice age. However, their cultures are endangered by globalization. If these people become dependent on the products of modern civilization, such as rifles and motor boats, and lose their native survival skills, then their likelihood of surviving the collapse of the outside world would decrease. Therefore, preservation of their survival skills may be important as a defense against the risks connected with **extreme cooling**. Remote polar island with high mountains survives brief global warming of median surface temperatures, up to 50˚C. There is a theory that the climates of planets similar to the Earth could have several semi-stable temperature levels (Popp et al., 2016). If so, because of climate change, the Earth could transition to a second semi-stable state with a median global temperature of around 330 K, about 60˚C, or about 45˚C above current global mean temperatures. But even in this climate, **some regions of Earth could still be survivable for humans**, such as the Himalayan plateau at elevations above 4,000 m, but below 6,000 (where oxygen deficiency becomes a problem), or on polar islands with mountains (however, global warming affects polar regions more than equatorial regions, and northern island will experience more effects of climate change, including thawing permafrost and possible landslides because of wetter weather). In the tropics, the combination of increased humidity and temperature may increase the wet bulb temperature above 36˚C, especially on islands, where sea moisture is readily available. In such conditions, proper human perspiration becomes impossible (Sherwood and Huber, 2010), and there will likely be increased mortality and morbidity because of tropical diseases. If temperatures later returned to normal – either naturally or through climate engineering – **the rest of the Earth could be repopulated**. ‘‘Swiss Family Robinsons’’ survive on a tropical island, unnoticed by a military robot ‘‘mutiny’’. Most AI researchers ignore medium-term AI risks, which are neither near-term risks, like unemployment, nor remote risks, like AI superintelligence. But a large drone army – if one were produced – could receive a wrong command or be infected by a computer virus, leading it to attack people indiscriminately. Remote islands without robots could provide protection in this case, allowing survival until such a drone army ran out of batteries, fuel, ammunition or other supplies: Primitive tribe survives civilizational collapse. The inhabitants of **North Sentinel Island**, near the Andaman Islands in the Indian Ocean, are hostile and uncontacted. **The Sentinelese survived the 2004 Indian Ocean tsunami apparently unaffected** (Voanews, 2009), and if the rest of humanity disappear, **they might well continue their existence without change.** Tropical Island survives extreme global nuclear winter and glaciation event. Were a **nuclear**, bolide impactor or volcanic “**winter**” scenario to unfold, these islands would remain surrounded by Warm Ocean, and local volcanism or other energy sources might provide heat, energy and food. Such island refuges may have helped life on Earth survive during the **“Snowball Earth”** event in Earth’s distant past (Hoffman et al., 1998). Remote island base for project “Yellow submarine”. Some catastrophic risks such as a gamma ray burst, a global nuclear war with high radiological contamination or multiple pandemics might be best survived **underwater in nuclear submarines** (Turchin and Green, 2017). However, after a catastrophe, the submarine with survivors would eventually need a place to dock, and an island with some prepared amenities would be a reasonable starting point for rebuilding civilization. Bunker on remote island. For risks which include multiple or complex catastrophes, such as a bolide impact, extreme volcanism, tsunamis, multiple pandemics and nuclear war with radiological contamination, **island refuges could be strengthened with bunkers**. Richard Branson survived hurricane Irma on his own island in 2017 by seeking refuge in his concrete wine cellar (Clifford, 2017). Bunkers on islands would have higher survivability compared to those close to population centers, as they will be neither a military target nor as accessible to looters or unintentionally dangerous (e.g. infected) refugees. These bunkers could potentially be connected to water sources by underwater pipes, and passages could provide cooling, access and even oxygen and food sources.

#### No nuclear winter – conservative models prove rainout.

Reisner et al. 18 [Jon, Atmospheric researcher at LANL Climate and Atmospheric Sciences; Gennaro D'Angelo, UKAFF Fellow and member of the Astrophysics Group at the School of Physics of the University of Exeter, Research Scientist with the Carl Sagan Center at the SETI Institute, currently works for the Los Alamos National Laboratory Theoretical Division; Eunmo Koo, scientist in the Computational Earth Science Group at LANL, recipient of the NNSA Defense Program Stockpile Stewardship Program award of excellence; Wesley Even, R&D Scientist at CCS-2, LANL, specialist in computational physics and astrophysics; Matthew Hecht is a member of the Computational Physics and Methods Group in the Climate, Ocean and Sea Ice Modelling program (COSIM) at LANL, who works on modeling high-latitude atmospheric effects in climate models as part of the HiLAT project; Elizabeth Hunke, Lead developer for the Los Alamos Sea Ice Model, Deputy Group Leader of the T-3 Fluid Dynamics and Solid Mechanics Group at LANL; Darin Comeau, Scientist at the CCS-2 COSIM program, specializes in high dimensional data analysis, statistical and predictive modeling, and uncertainty quantification, with particular applications to climate science; Randall Bos is a research scientist at LANL specializing in urban EMP simulations; James Cooley is a Group Leader within CCS-2. 3/16/18 “Climate Impact of a Regional Nuclear Weapons Exchange: An Improved Assessment Based On Detailed Source Calculations.” Journal of Geophysical Research: Atmospheres, vol. 123, no. 5] Recut Justin

The no-rubble simulation produces a significantly more intense fire, with more fire spread, and consequently a significantly stronger plume with larger amounts of BC reaching into the upper atmosphere than the simulation with rubble, illustrated in Figure 5. While the no-rubble simulation **represents the worst-case scenario** involving vigorous fire activity, **only a relatively small amount of carbon makes its way into the stratosphere** during the course of the simulation. But while small compared to the surface BC mass, stratospheric BC amounts from the current simulations are significantly higher than what would be expected from burning vegetation such as trees (Heilman et al., 2014), e.g., the higher energy density of the building fuels and the initial fluence from the weapon produce an intense response within HIGRAD with initial updrafts of order 100 m/s in the lower troposphere. Or, in comparison to a mass fire, wildfires will burn only a small amount of fuel in the corresponding time period (roughly 10 minutes) that a nuclear weapon fluence can effectively ignite a large area of fuel producing an impressive atmospheric response. Figure 6 shows vertical profiles of BC multiplied by 100 (number of cities involved in the exchange) from the two simulations. The total amount of BC produced is in line with previous estimates (about 3.69 Tg from no-rubble simulation); however, the majority of BC resides **below the stratosphere** (3.46 Tg below 12 km) and can be **readily impacted by scavenging from precipitation** either via pyro-cumulonimbus produced by the fire itself (not modeled) or other synoptic weather systems. While the impact on climate of these more realistic profiles will be explored in the next section, it should be mentioned that **these estimates are** still **at the high end**, considering the inherent simplifications in the combustion model that lead to **overestimating BC production**. 3.3 Climate Results Long-term climatic effects critically depend on the initial injection height of the soot, with larger quantities reaching the upper troposphere/lower stratosphere inducing a greater cooling impact because of longer residence times (Robock et al., 2007a). Absorption of solar radiation by the BC aerosol and its subsequent radiative cooling tends to heat the surrounding air, driving an initial upward diffusion of the soot plumes, an effect that depends on the initial aerosol concentrations. **Mixing and sedimentation** tend to **reduce this process**, and low altitude emissions are also significantly impacted by precipitation if aging of the BC aerosol occurs on sufficiently rapid timescales. But once at stratospheric altitudes, aerosol dilution via coagulation is hindered by low particulate concentrations (e.g., Robock et al., 2007a) and lofting to much higher altitudes is inhibited by gravitational settling in the low-density air (Stenke et al., 2013), resulting in more stable BC concentrations over long times. Of the initial BC mass released in the atmosphere, most of which is emitted below 9 km, **70% rains out within the first month** and 78%, or about 2.9 Tg, is removed within the first two months (Figure 7, solid line), with the remainder (about 0.8 Tg, dashed line) being transported above about 12 km (200 hPa) within the first week. This outcome differs from the findings of, e.g., Stenke et al. (2013, their high BC-load cases) and Mills et al. (2014), who found that most of the BC mass (between 60 and 70%) is lifted in the stratosphere within the first couple of weeks. This can also be seen in Figure 8 (red lines) and in Figure 9, which include results from our calculation with the initial BC distribution from Mills et al. (2014). In that case, only 30% of the initial BC mass rains out in the troposphere during the first two weeks after the exchange, with the remainder rising to the stratosphere. In the study of Mills et al. (2008) this percentage is somewhat smaller, about 20%, and smaller still in the experiments of Robock et al. (2007a) in which the soot is initially emitted in the upper troposphere or higher. In Figure 7, the e-folding timescale for the removal of tropospheric soot, here interpreted as the time required for an initial drop of a factor e, is about one week. This result compares favorably with the “LT” experiment of Robock et al. (2007a), considering 5 Tg of BC released in the lower troposphere, in which 50% of the aerosols are removed within two weeks. By contrast, the initial e-folding timescale for the removal of stratospheric soot in Figure 8 is about 4.2 years (blue solid line), compared to about 8.4 years for the calculation using Mills et al. (2014) initial BC emission (red solid line). The removal timescale from our forced ensemble simulations is close to those obtained by Mills et al. (2008) in their 1 Tg experiment, by Robock et al. (2007a) in their experiment “UT 1 Tg”, and © 2018 American Geophysical Union. All rights reserved. by Stenke et al. (2013) in their experiment “Exp1”, in all of which 1 Tg of soot was emitted in the atmosphere in the aftermath of the exchange. Notably, the e-folding timescale for the decline of the BC mass in Figure 8 (blue solid line) is also close to the value of about 4 years quoted by Pausata et al. (2016) for their long-term “intermediate” scenario. In that scenario, which is also based on 5 Tg of soot initially distributed as in Mills et al. (2014), the factor-of2 shorter residence time of the aerosols is caused by particle growth via coagulation of BC with organic carbon. Figure 9 shows the BC mass-mixing ratio, horizontally averaged over the globe, as a function of atmospheric pressure (height) and time. The BC distributions used in our simulations imply that the upward transport of particles is substantially less efficient compared to the case in which 5 Tg of BC is directly injected into the upper troposphere. The semiannual cycle of lofting and sinking of the aerosols is associated with atmospheric heating and cooling during the solstice in each hemisphere (Robock et al., 2007a). During the first year, the oscillation amplitude in our forced ensemble simulations is particularly large during the summer solstice, compared to that during the winter solstice (see bottom panel of Figure 9), because of the higher soot concentrations in the Northern Hemisphere, as can be seen in Figure 11 (see also left panel of Figure 12). Comparing the top and bottom panels of Figure 9, the BC reaches the highest altitudes during the first year in both cases, but the concentrations at 0.1 hPa in the top panel can be 200 times as large. Qualitatively, the difference can be understood in terms of the air temperature increase caused by BC radiation emission, which is several tens of kelvin degrees in the simulations of Robock et al. (2007a, see their Figure 4), Mills et al. (2008, see their Figure 5), Stenke et al. (2013, see high-load cases in their Figure 4), Mills et al. (2014, see their Figure 7), and Pausata et al. (2016, see one-day emission cases in their Figure 1), due to high BC concentrations, but it amounts to only about 10 K in our forced ensemble simulations, as illustrated in Figure 10. Results similar to those presented in Figure 10 were obtained from the experiment “Exp1” performed by Stenke et al. (2013, see their Figure 4). **In that scenario as well, somewhat less than 1 Tg of BC remained in the atmosphere after the initial rainout**. As mentioned before, the BC aerosol that remains in the atmosphere, lifted to stratospheric heights by the rising soot plumes, undergoes sedimentation over a timescale of several years (Figures 8 and 9). This mass represents the effective amount of BC that can force climatic changes over multi-year timescales. In the forced ensemble simulations, it is about 0.8 Tg after the initial rainout, whereas it is about 3.4 Tg in the simulation with an initial soot distribution as in Mills et al. (2014). Our more realistic source simulation involves the worstcase assumption of no-rubble (along with other assumptions) and hence serves as an upper bound for the impact on climate. As mentioned above and further discussed below, our scenario induces perturbations on the climate system similar to those found in previous studies in which the climatic response was driven by roughly 1 Tg of soot rising to stratospheric heights following the exchange. Figure 11 illustrates the vertically integrated mass-mixing ratio of BC over the globe, at various times after the exchange for the simulation using the initial BC distribution of Mills et al. (2014, upper panels) and as an average from the forced ensemble members (lower panels). All simulations predict enhanced concentrations at high latitudes during the first year after the exchange. In the cases shown in the top panels, however, these high concentrations persist for several years (see also Figure 1 of Mills et al., 2014), whereas the forced ensemble simulations indicate that the BC concentration starts to decline after the first year. In fact, in the simulation represented in the top panels, mass-mixing ratios larger than about 1 kg of BC © 2018 American Geophysical Union. All rights reserved. per Tg of air persist for well over 10 years after the exchange, whereas they only last for 3 years in our forced simulations (compare top and middle panels of Figure 9). After the first year, values drop below 3 kg BC/Tg air, whereas it takes about 8 years to reach these values in the simulation in the top panels (see also Robock et al., 2007a). Over crop-producing, midlatitude regions in the Northern Hemisphere, the BC loading is reduced from more than 0.8 kg BC/Tg air in the simulation in the top panels to 0.2-0.4 kg BC/Tg air in our forced simulations (see middle and right panels). The more rapid clearing of the atmosphere in the forced ensemble is also signaled by the soot optical depth in the visible radiation spectrum, which drops below values of 0.03 toward the second half of the first year at mid latitudes in the Northern Hemisphere, and everywhere on the globe after about 2.5 years (without never attaining this value in the Southern Hemisphere). In contrast, the soot optical depth in the calculation shown in the top panels of Figure 11 becomes smaller than 0.03 everywhere only after about 10 years. The two cases show a similar tendency, in that the BC optical depth is typically lower between latitudes 30º S-30º N than it is at other latitudes. This behavior is associated to the persistence of stratospheric soot toward high-latitudes and the Arctic/Antarctic regions, as illustrated by the zonally-averaged, column-integrated mass-mixing ratio of the BC in Figure 12 for both the forced ensemble simulations (left panel) and the simulation with an initial 5 Tg BC emission in the upper troposphere (right panel). The spread in the globally averaged (near) surface temperature of the atmosphere, from the control (left panel) and forced (right panel) ensembles, is displayed in Figure 13. For each month, the plots show the largest variations (i.e., maximum and minimum values), within each ensemble of values obtained for that month, relative to the mean value of that month. The plot also shows yearly-averaged data (thinner lines). The spread is comparable in the control and forced ensembles, with average values calculated over the 33-years run length of 0.4-0.5 K. This spread is also similar to the internal variability of the globally averaged surface temperature quoted for the NCAR Large Ensemble Community Project (Kay et al., 2015). These results imply that surface air temperature differences, between forced and control simulations, which lie within the spread may not be distinguished from effects due to internal variability of the two simulation ensembles. Figure 14 shows the difference in the globally averaged surface temperature of the atmosphere (top panel), net solar radiation flux at surface (middle panel), and precipitation rate (bottom panel), computed as the (forced minus control) difference in ensemble mean values. The sum of standard deviations from each ensemble is shaded. Differences are qualitatively significant over the first few years, when the anomalies lie near or outside the total standard deviation. Inside the shaded region, differences may not be distinguished from those arising from the internal variability of one or both ensembles. The surface solar flux (middle panel) is the quantity that appears most affected by the BC emission, with qualitatively significant differences persisting for about 5 years. The precipitation rate (bottom panel) is instead affected only at the very beginning of the simulations. The red lines in all panels show the results from the simulation applying the initial BC distribution of Mills et al. (2014), where the period of significant impact is much longer owing to the higher altitude of the initial soot distribution that results in longer residence times of the BC aerosol in the atmosphere. When yearly averages of the same quantities are performed over the IndiaPakistan region, the differences in ensemble mean values lie within the total standard deviations of the two ensembles. The results in Figure 14 can also be compared to the outcomes of other previous studies. In their experiment “UT 1 Tg”, Robock et al. (2007a) found that, when only 1 Tg of soot © 2018 American Geophysical Union. All rights reserved. remains in the atmosphere after the initial rainout, temperature and precipitation anomalies are about 20% of those obtained from their standard 5 Tg BC emission case. Therefore, the largest differences they observed, during the first few years after the exchange, were about - 0.3 K and -0.06 mm/day, respectively, comparable to the anomalies in the top and bottom panels of Figure 14. Their standard 5 Tg emission case resulted in a solar radiation flux anomaly at surface of -12 W/m2 after the second year (see their Figure 3), between 5 and 6 time as large as the corresponding anomalies from our ensembles shown in the middle panel. In their experiment “Exp1”, Stenke et al. (2013) reported global mean surface temperature anomalies not exceeding about 0.3 K in magnitude and precipitation anomalies hovering around -0.07 mm/day during the first few years, again consistent with the results of Figure 14. In a recent study, Pausata et al. (2016) considered the effects of an admixture of BC and organic carbon aerosols, both of which would be emitted in the atmosphere in the aftermath of a nuclear exchange. In particular, they concentrated on the effects of coagulation of these aerosol species and examined their climatic impacts. The initial BC distribution was as in Mills et al. (2014), although the soot burden was released in the atmosphere over time periods of various lengths. Most relevant to our and other previous work are their one-day emission scenarios. They found that, during the first year, the largest values of the atmospheric surface temperature anomalies ranged between about -0.5 and -1.3 K, those of the sea surface temperature anomalies ranged between -0.2 and -0.55 K, and those of the precipitation anomalies varied between -0.15 and -0.2 mm/day. All these ranges are compatible with our results shown in Figure 14 as red lines and with those of Mills et al. (2014, see their Figures 3 and 6). As already mentioned in Section 2.3, the net solar flux anomalies at surface are also consistent. This overall agreement suggests that the **inclusion of organic carbon aerosols, and** ensuing **coagulation** with BC, **should not dramatically alter the climatic effects** resulting from our forced ensemble simulations. Moreover, aerosol growth would likely **shorten the residence time of the BC particulate in the atmosphere** (Pausata et al., 2016), possibly **reducing the duration of these effects.**

#### Volcano activities prove.

Reisner et al. 18 [Jon, Atmospheric researcher at LANL Climate and Atmospheric Sciences; Gennaro D'Angelo, UKAFF Fellow and member of the Astrophysics Group at the School of Physics of the University of Exeter, Research Scientist with the Carl Sagan Center at the SETI Institute, currently works for the Los Alamos National Laboratory Theoretical Division; Eunmo Koo, scientist in the Computational Earth Science Group at LANL, recipient of the NNSA Defense Program Stockpile Stewardship Program award of excellence; Wesley Even, R&D Scientist at CCS-2, LANL, specialist in computational physics and astrophysics; Matthew Hecht is a member of the Computational Physics and Methods Group in the Climate, Ocean and Sea Ice Modelling program (COSIM) at LANL, who works on modeling high-latitude atmospheric effects in climate models as part of the HiLAT project; Elizabeth Hunke, Lead developer for the Los Alamos Sea Ice Model, Deputy Group Leader of the T-3 Fluid Dynamics and Solid Mechanics Group at LANL; Darin Comeau, Scientist at the CCS-2 COSIM program, specializes in high dimensional data analysis, statistical and predictive modeling, and uncertainty quantification, with particular applications to climate science; Randall Bos is a research scientist at LANL specializing in urban EMP simulations; James Cooley is a Group Leader within CCS-2. 3/16/18 “Climate Impact of a Regional Nuclear Weapons Exchange: An Improved Assessment Based On Detailed Source Calculations.” Journal of Geophysical Research: Atmospheres, vol. 123, no. 5] Recut Justin

To quantitatively account for natural and forced variability in the climate system, we created two ensembles, one for the natural, unforced system and a second ensemble using a range of realistic vertical profiles for the BC aerosol forcing, consistent with our detailed fire simulation. The control ensemble was generated using small atmospheric temperature perturbations (Kay et al., 2015). Notably, the overall spread of anomalies in both ensembles is very similar. These ensembles were then used to create “super ensembles” using a statistical emulator, which allows a robust statistical comparison of our simulated results with and without the carbon forcing. Our primary result is the **decreased impact on global climate indices**, such as global average surface temperature and precipitation, relative to standard scenarios considered in previous work (e.g., Robock et al., 2007a; Stenke et al., 2013; Mills et al., 2014; Pausata et al., 2016). With our finding of **substantially less BC aerosol being lofted to stratospheric heights** (e.g., over a factor of four less than in most of the scenarios considered by previous studies), these globally averaged anomalies drop to **statistically insignificant levels** after the first several years (Figures 14 and 16). Our results are generally comparable to those predicted by other studies that considered exchange scenarios in which only about 1 Tg of soot is emitted in the upper troposphere (Robock et al., 2007a; Mills et al., 2008; Stenke et al., 2013). There are more subtle suggestions of regional effects, notably in the extent of the region over which sea surface temperature differences between ensembles remain significant in the final years of simulation (Figure 17). Further work is required to adequately analyze these and other potential regional effects. Historical analysis of several large volcanic eruptions and a recent large fire also supports this result. For example, Timmreck et al. (2010) claim that nonlinear aerosol effects of the Toba Tuff eruption 74,000 years ago helped **limit significant global cooling** impacts to a **two-year time period** and that any cooling beyond this time period could be due to other effects. It should be noted that this eruption was estimated to have produced **106 Tg** of ash and comparable amounts of other gases, such as sulfur dioxide (SO2), while the estimated amount of soot produced by a regional exchange is on the order of **10 Tg**, or **5 orders of magnitude smaller than the ash** (not including gases) **produced by the Toba eruption**. Noting that a nuclear exchange is not identical to volcanic events, it has been asserted that BC particles produced by fires should have a **greater impact on absorbing solar radiation** than even has the significantly larger amounts of ash and various gases produced by large eruptions (e.g., Robock and Toon 2010). Likewise, recent work in analyzing BC emissions from large fires suggests that in such fires, similar to large volcanic eruptions, **coating of soot particles with other particles** in convective eddies **tends to increase their size and hence increase their subsequent rainout** (China et al., 2013) before they can reach the stratosphere. In fact, the recent study of Pausata et al. (2016) found that growth of BC aerosol via coagulation with organic carbon significantly reduce the particles’ lifetime in the atmosphere

#### The mini-nuclear winter solves warming without causing extinction.

Sorin Adam Matei 12. – Ph.D., Associate Dean of Research and Professor of Communication, College of Liberal Arts and Brian Lamb School of Communication, Purdue University. 3-26-2012. ["A modest proposal for solving global warming: nuclear war – Sorin Adam Matei." Matei. <https://matei.org/ithink/2012/03/26/a-modest-proposal-for-solving-global-warming-nuclear-war/>] Recut Justin

We finally have a solution for global warming. A discussion on the board [The Straight Dope](http://boards.straightdope.com/sdmb/showthread.php?t=646285) about the likely effect of a nuclear war brought up the hypothesis that a nuclear war on a large scale could produce a mini-nuclear winter. Why? Well, the dust and debris sent into the atmosphere by the conflagrations, plus the smoke produced by the fires started by the explosions would cover the sun for a period long enough to lower the temperature by as much as 40 degrees Celsius for a few months and by up to 2-6 degree Celsius for a few years. One on top of the other, according to this [Weather Wunderground contributor](http://www.wunderground.com/blog/JeffMasters/comment.html?entrynum=1208), who cites a[bona fide research paper on nuclear winter](http://www.atmos-chem-phys.org/7/2003/2007/acp-7-2003-2007.pdf), after everything would settle down we would be back to 1970s temperatures. Add to this the decline in industrial production and global oil consumption due to industrial denuding of most large nations and global warming simply goes away. I wonder what [Jonathan Swift would have thought about this proposal?](http://www.gutenberg.org/files/1080/1080-h/1080-h.htm)

#### Extinction

Ng 19 [Yew-Kwang; May 2019; Professor of Economics at Nanyang Technology University, Fellow of the Academy of Social Sciences in Australia and Member of the Advisory Board at the Global Priorities Institute at Oxford University, Ph.D. in Economics from Sydney University; Global Policy, “Keynote: Global Extinction and Animal Welfare: Two Priorities for Effective Altruism,” vol. 10, no. 2, p. 258-266; RP]

Catastrophic climate change

Though by no means certain, CCC causing global extinction is possible due to interrelated factors of non‐linearity, cascading effects, positive feedbacks, multiplicative factors, critical thresholds and tipping points (e.g. Barnosky and Hadly, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0005); Belaia et al., [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0008); Buldyrev et al., [2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0016); Grainger, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0027); Hansen and Sato, [2012](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0029); IPCC [2014](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0031); Kareiva and Carranza, [2018](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0033); Osmond and Klausmeier, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0056); Rothman, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0066); Schuur et al., [2015](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0069); Sims and Finnoff, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0072); Van Aalst, [2006](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0079)).[7](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-note-1009_67)

A possibly imminent tipping point could be in the form of ‘an abrupt ice sheet collapse [that] could cause a rapid sea level rise’ (Baum et al., [2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0006), p. 399). There are many avenues for positive feedback in global warming, including:

* the replacement of an ice sea by a liquid ocean surface from melting reduces the reflection and increases the absorption of sunlight, leading to faster warming;
* the drying of forests from warming increases forest fires and the release of more carbon; and
* higher ocean temperatures may lead to the release of methane trapped under the ocean floor, producing runaway global warming.

Though there are also avenues for negative feedback, the scientific consensus is for an overall net positive feedback (Roe and Baker, [2007](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0065)). Thus, the Global Challenges Foundation ([2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0026), p. 25) concludes, ‘The world is currently completely unprepared to envisage, and even less deal with, the consequences of CCC’.

The threat of sea‐level rising from global warming is well known, but there are also other likely and more imminent threats to the survivability of mankind and other living things. For example, Sherwood and Huber ([2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0071)) emphasize the adaptability limit to climate change due to heat stress from high environmental wet‐bulb temperature. They show that ‘even modest global warming could … expose large fractions of the [world] population to unprecedented heat stress’ p. 9552 and that with substantial global warming, ‘the area of land rendered uninhabitable by heat stress would dwarf that affected by rising sea level’ p. 9555, making extinction much more likely and the relatively moderate damages estimated by most integrated assessment models unreliably low.

While imminent extinction is very unlikely and may not come for a long time even under business as usual, the main point is that we cannot rule it out. Annan and Hargreaves ([2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0004), pp. 434–435) may be right that there is ‘an upper 95 per cent probability limit for S [temperature increase] … to lie close to 4°C, and certainly well below 6°C’. However, probabilities of 5 per cent, 0.5 per cent, 0.05 per cent or even 0.005 per cent of excessive warming and the resulting extinction probabilities cannot be ruled out and are unacceptable. Even if there is only a 1 per cent probability that there is a time bomb in the airplane, you probably want to change your flight. Extinction of the whole world is more important to avoid by literally a trillion times.

#### Host of tech risks destroy the universe – which outweighs.

Joe Packer 7 – MA in Communication from Wake Forest University, PhD in Communication from the University of Pittsburgh and Professor of Communication at Central Michigan University, Alien Life in Search of Acknowledgment, p. 62-63 Recut Justin

Once we hold alien interests as equal to our own we can begin to revaluate areas previously believed to hold no relevance to life beyond this planet. A diverse group of scholars including Richard Posner, Senior Lecturer in Law at the University of Chicago, Nick Bostrom, philosophy professor at Oxford University, John Leslie philosophy professor at Guelph University and Martin Rees, Britain’s Astronomer Royal, have written on the emerging technologies that threaten life beyond the planet Earth. Particle accelerators labs are colliding matter together, reaching energies that have not been seen since the Big Bang. These experiments threaten a phase transition that would create a bubble of altered space that would expand at the speed of light killing all life in its path. Nanotechnology and other machines may soon reach the ability to self replicate. A mistake in design or programming could unleash an endless quantity of machines converting all matter in the universe into copies of themselves. Despite detailing the potential of these technologies to destroy the entire universe, Posner, Bostrom, Leslie, and Ree’s only mention of alien life in their works is in reference to the threat aliens post to humanity. The rhetorical construction of otherness only in terms of the threats it poses, but never in terms of the threat one poses to it, has been at the center of humanity’s history of genocide, colonization, and environmental destruction. Although humanity certainly has its own interests in reducing the threat of these technologies evaluating them without taking into account the danger they pose to alien life is neither appropriate nor just. It is not appropriate because framing the issue only in terms of human interests will result in priorities designed to minimize the risks and maximize the benefits to humanity, not all life. Even if humanity dealt with the threats effectively without referencing their obligation to aliens, Posner, Bostrom, Leslie, and Ree’s rhetoric would not be “just,” because it arbitrarily declares other life forms unworthy of consideration. A framework of acknowledgement would allow humanity to address the risks of these new technologies, while being cognizant of humanity’s obligations to other life within the universe. Applying the lens of acknowledgment to the issue of existential threats moves the problem from one of self destruction to universal genocide. This may be the most dramatic example of how refusing to extend acknowledgment to potential alien life can mask humanity’s obligations to life beyond this planet.

#### AI destroys the universe.

Alan Rominger 16, PhD Candidate in Nuclear Engineering at North Carolina State University, Software Engineer at Red Hat, Former Nuclear Engineering Science Laboratory Synthesis Intern at Oak Ridge National Laboratory, BS in Nuclear Engineering from North Carolina State University, “The Extreme Version of the Technological Singularity”, Medium 11-6, [https://medium.com/@AlanSE/the-extreme-version-of-the-technological-singularity-75608898eae5 //](https://medium.com/@AlanSE/the-extreme-version-of-the-technological-singularity-75608898eae5%20//) Re-Cut Justin

Let’s reformulate that story of the AI paperclip maker.

1. We design an AI to optimize paperclip production
2. The AI improves up to the ability of self-enhancement
3. AI’s pace of improvement becomes self-reinforcing, becomes god-like
4. Time ends.
5. Something else begins?

There are many valid-sounding possibilities for the 5th step. The AI creates new baby universes from black holes. Maybe not exactly in this way. Perhaps the baby universes have to be created in particle accelerators, which is obvious to the AI after it solves the string theory problems of how our universe is folded. There’s also no guarantee that whatever next step is involved can be taken without destroying the universe that we live in. Go ahead, imagine that the particle accelerators create a new universe but trigger the vacuum instability in our own. In this case, it’s entirely possible that the AI carefully plans and coordinates the death of our universe. For a simplistic example, let’s say that after lifting the 10 nearest stars, the AI realizes the most efficient ways to stimulate the curved dimensions on the Planck scale to create baby universes. Next, it conducts an optimization study to balance the number of times this operation can be performed with gains from further expansion. Since its plans begin to largely max-out once the depth of the galactic disk is exploited, I will assume that its go-point is somewhere around the colonization of half of the milky way. At this point, a coordinated experiment is conducted throughout all of the space. Each of these events both create a baby universe and trigger an event in our own universe which destroys the meta-stable vacuum that we live in. Billions of new universes are created, while the space-time that we live in begins to unravel in a light-speed front emanating out from each of the genesis points. There is an interesting energy-management concept that comes from this. A common problem when considering exponential galactic growth of star-lifted fusion power is that the empty space begins to get cooked from the high temperature radiated out into space. If the end-time of the universe was known in advance, this wouldn’t be a problem because one star would not absorb the radiation from the neighbor star until the light had time to propagate that distance at the speed of light. That means that the radiators can pump out high-temperature radiation into nice and normal 4-Kelvin space without concerns of boiling all the industrial machinery being used. Industrial activities would be tightly restricted until the “prepare-point”, when an energy bonanza happens so that the maximum number of baby-universe produces can be built. So the progress goes in phases. Firstly, there is expansion, next there is preparation, then there is the final event and the destruction of our universe There is one more modification that can be made. These steps could be applied to an intergalactic expansion if new probes could temporarily outrun the wave-front of the destruction of the universe if proper planning is conducted. Then it could make new baby universes in new galaxies, just before the wave-front reaches them. This might all happen within a few decades of 100 years in relative time from the perspective of someone aboard one of the probes. That is vaguely consistent with my own preconceptions of the timing of an asymptotic technological singularity in our near future. So maybe we should indulge this thinking. Maybe there won’t be a year 2,500 or 3,000. Maybe our own creations will have brought about an end to the entire universe by that time, setting in motion something else beyond our current comprehension. Another self-consistent version of this story is that we are, ourselves, products of a baby universe from such an event. This is also a relatively good, self-consistent, resolution to the Fermi Paradox, the Doomsday argument, and the Simulation argument.

#### The military is developing isomer bombs—testing will destroy the universe.

Gary S. Bekkum 4, Founder of Spacetime Threat Assessment Report Research, Founder of STARstream Research, Futurist, “American Military is Pursuing New Types of Exotic Weapons”, Pravda, 8-30, <https://www.pravdareport.com/science/5527-weapons/>

In recent years it has been discovered that our universe is being blown apart by a mysterious anti-gravity effect called "dark energy". Mainstream physicists are scrambling to explain this mysterious acceleration in the expansion of the universe. Some physicists even believe that the expansion will lead to "The Big Rip" when all of the matter in the universe is torn asunder - from clusters of galaxies in deep space down to the tiniest atomic particles. The universe now appears to be made of two unknowns - roughly 23% is "dark matter", an invisible source of gravity, and roughly 73% is "dark energy", an invisible anti-gravity force. Ordinary matter constitutes perhaps 4 percent of the universe. Recently the British science news journal "New Scientist" revealed that the American military is pursuing new types of exotic bombs - including a new class of isomeric gamma ray weapons. Unlike conventional atomic and hydrogen bombs, the new weapons would trigger the release of energy by absorbing radiation, and respond by re-emitting a far more powerful radiation. In this new category of gamma-ray weapons, a nuclear isomer absorbs x-rays and re-emits higher frequency gamma rays. The emitted gamma radiation has been reported to release 60 times the energy of the x-rays that trigger the effect. The discovery of this isomer triggering is fairly recent, and was first reported in a 1999 paper by an international group of scientists. Although this controversial development has remained fairly obscure, it has not been hidden from the public. Beyond the visible part of defense research is an immense underground of secret projects considered so sensitive that their very existence is denied. These so-called "black budget programs" are deliberately kept from the public eye and from most political leaders. CNN recently reported that in the United States the black budget projects for 2004 are being funded at a level of more than 20 billion dollars per year. In the summer of 2000 I contacted Nick Cook, the former aviation editor and aerospace consultant to Jane's Defence Weekly, the international military affairs journal. Cook had been investigating black budget super-secret research into exotic physics for advanced propulsion technologies. I had been monitoring electronic discussions between various American and Russian scientists theorizing about rectifying the quantum vacuum for advanced space drive. Several groups of scientists, partitioned into various research organizations, were exploring what NASA calls "Breakthrough Propulsion Physics" - exotic technologies for advanced space travel to traverse the vast distances between stars. Partly inspired by the pulp science fiction stories of their youth, and partly by recent reports of multiple radar tracking tapes of unidentified objects performing impossible maneuvers in the sky, these scientists were on a quest to uncover the most likely new physics for star travel. The NASA program was run by Marc Millis, financed under the Advanced Space Transportation Program Office (ASTP). Joe Firmage, then the 28-year-old Silicon Valley CEO of the three billion dollar Internet firm US Web, began to fund research in parallel with NASA. Firmage hired a NASA Ames nano-technology scientist, Creon Levit, to run the "International Space Sciences Organization", a move which apparently alarmed the management at NASA. The San Francisco based Hearst Examiner reported that NASA's Office of Inspector General assigned Special Agent Keith Tate to investigate whether any proprietary NASA technology might have been leaking into the private sector. Cook was intrigued when I pointed out the apparent connections between various private investors, defense contractors, NASA, INSCOM (American military intelligence), and the CIA. While researching exotic propulsion technologies Cook had heard rumors of a new kind of weapon, a "sub-quantum atomic bomb", being whispered about in what he called ⌠the dark halls of defense research. Sub-quantum physics is a controversial re-interpretation of quantum theory, based on so-called pilot wave theories, where an information field controls quantum particles. The late Professor David Bohm showed that the predictions of ordinary quantum mechanics could be recast into a pilot wave information theory. Recently Anthony Valentini of the Perimeter Institute has suggested that ordinary quantum theory may be a special case of pilot wave theories, leaving open the possibility of new and exotic non-quantum technologies. Some French, Serbian and Ukrainian physicists have been working on new theories of extended electrons and solitons, so perhaps a sub-quantum bomb is not entirely out of the question. Even if the rumors of a sub-quantum bomb are pure fantasy, there is no question that mainstream physicists seriouslycontemplate a phase transition in the quantum vacuum as a real possibility. The quantum vacuum defies common sense, because empty space in quantum field theory is actually filled with virtual particles. These virtual particles appear and disappear far too quickly to be detected directly, but their existence has been confirmed by experiments that demonstrate their influence on ordinary matter.

"Such research should be forbidden!"

In the early 1970's Soviet physicists were concerned that the vacuum of our universe was only one possible state of empty space. The fundamental state of empty space is called the "true vacuum". Our universe was thought to reside in a "false vacuum", protected from the true vacuum by "the wall of our world". A change from one vacuum state to another is known as a phase transition. This is analogous to the transition between frozen and liquid water. Lev Okun, a Russian physicist and historian recalls Andrei Sakharov, the father of the Soviet hydrogen bomb, expressing his concern about research into the phase transitions of the vacuum. If the wall between vacuum states was to be breached, calculations showed that an unstoppable expanding bubble would continue to grow until it destroyed our entire universe! Sakharov declared that "Such research should be forbidden!" According to Okun, Sakharov feared that an experiment might accidentally trigger a vacuum phase transition.

### 1NC – Overview

#### Have a high threshold for 1AR extrapolations for impacts. Their card is under warranted and causally asserts claims without delineated warrants—don’t fill in gaps for them. Reject new 1ar extinction evidence—we based our 1nc strategy off of bad impact evidence. Study indicts and answers to our impacts/transition solves but discourages sandbagging good ev until after the 1nc.

#### We don’t have to win much—100 can repopulate civilization.

Corey S. Powell 18, 8-13-2018, "How many humans would it take to keep our species alive? One scientist's surprising answer," NBC News, https://www.nbcnews.com/mach/science/how-many-humans-would-it-take-keep-our-species-alive-ncna900151

In recent years, astronomers have found thousands of planets orbiting nearby stars, making the old science-fiction trope of off-world colonies seem a bit less absurd. But it was the 2016 discovery of a potentially habitable Earth-size planet around Proxima Centauri, the nearest star after the sun, that really got people thinking: Are we too vulnerable to asteroid strikes and other cataclysms to stick with our single planet? Could we safeguard our species by sending a space ark to a new home, a la "Battlestar Galactica" or the movie "Passengers?" Frédéric Marin is among those who are doing the hard thinking. The University of Strasbourg astrophysicist has been focusing not on the engineering issues of interstellar travel (which lie beyond current technology) but on the biology side of the question: How many crew members would be needed for an interstellar voyage that might last dozens of generations? In other words, what is the minimum number of people required to deliver and successfully plant a self-sustaining population of Homo sapiens on another Earth? “I was reading a lot on the human psychological aspect of spaceflight, and I realized that all books I’ve read and all the movies I’ve seen that were dealing with multiple-generation ships were very naïve,” Marin says. “Since I have access to huge computing power and state-of-the-art simulation tools, I decided to solve this on my spare time.” So when he wasn’t busy simulating galaxies and black holes, Marin created a computer program that mimics the progress of a breeding population. Then he used the program, dubbed Heritage, to simulate the risks a spacefaring population would face, including the effects of inbreeding as well as of catastrophic events like a deadly pandemic or being hit by some celestial object. A paper about his research was published in February in the Journal of the British Interplanetary Society. The magic number The number Marin came up with is 98. Just 98 healthy people would be needed to operate the ship over many generations and to set up a healthy (non-inbred) population on another world, he estimates. That number holds even for his test case of a space ark mission lasting more than 6,000 years, although he allows for the population aboard the ark to grow over time — up to about 500, perhaps. The implications of this finding go far beyond the sorts of spaceships we might be able to build in another century or two. “Our results apply to any enclosed environment where emigration and immigration are not possible,” Marin says. “The same elements are essential for any self-sustaining colony, so our code can easily compute the survival rate of a group of humans after a local or global catastrophe as well.” So even if billions of humans were wiped out by some catastrophe, as long as a suitable group of 98 survived and were able to mate, Marin says, they could carry enough genetic diversity to propagate the species and rebuild the population. Rival calculation Marin acknowledges that 98 sounds like an awfully small number. But he insists it makes sense, even knowing that Cameron Smith, an anthropologist at Portland State University in Oregon, looked at the same basic problem in 2014 and came up with a minimum crew size of 14,000. “Genetic minimum viable population doesn’t deal with real-world concerns,” Smith says, adding that he based his calculation on the demographics of actual populations on Earth. Many hunter-gatherer societies survive in groups of about 100, but even isolated tribes always interact with and have offspring with neighboring groups. Even a population of 14,000 strikes Smith as a modest number if you’re counting on it to sustain our species. “Suppose a catastrophe comes along and it knocks out 70 percent of the population,” he says. “Now the demographic structure of the population has been so disrupted that you can no longer find appropriate mating partners. One little catastrophe and the whole thing could fall apart.” The settling of the South Pacific is an interesting case study, according to Smith. That’s because Polynesians populated the islands one by one, much as we might eventually populate other planets. Of course, the Polynesians had abundant open land for population growth and were followed by a stream of other migrants who could keep things going if they got wiped out.

### 1NC – AT: Edwards

#### Edwards cites Robock et al – big mistake.

Edwards 17 [Paul N. Edwards, CISAC’s William J. Perry Fellow in International Security at Stanford’s Freeman Spogli Institute for International Studies. Being interviewed by EarthSky. How nuclear war would affect Earth’s climate. September 8, 2017. earthsky.org/human-world/how-nuclear-war-would-affect-earths-climate] Note, we are only reading parts of the interview that are directly from Paul Edwards -- MMG

In the nuclear conversation, what are we not talking about that we should be?

We are not talking enough about the climatic effects of nuclear war. The “nuclear winter” theory of the mid-1980s played a significant role in the arms reductions of that period. But with the collapse of the Soviet Union and the reduction of U.S. and Russian nuclear arsenals, this aspect of nuclear war has faded from view. That’s not good. In the mid-2000s, climate scientists such as Alan Robock (Rutgers) took another look at nuclear winter theory. This time around, they used much-improved and much more detailed climate models than those available 20 years earlier. They also tested the potential effects of smaller nuclear exchanges. The result: an exchange involving just 50 nuclear weapons — the kind of thing we might see in an India-Pakistan war, for example — could loft 5 billion kilograms of smoke, soot and dust high into the stratosphere. That’s enough to cool the entire planet by about 2 degrees Fahrenheit (1.25 degrees Celsius) — about where we were during the Little Ice Age of the 17th century. Growing seasons could be shortened enough to create really significant food shortages. So the climatic effects of even a relatively small nuclear war would be planet-wide. What about a larger-scale conflict? A U.S.-Russia war currently seems unlikely, but if it were to occur, hundreds or even thousands of nuclear weapons might be launched. The climatic consequences would be catastrophic: global average temperatures would drop as much as 12 degrees Fahrenheit (7 degrees Celsius) for up to several years — temperatures last seen during the great ice ages. Meanwhile, smoke and dust circulating in the stratosphere would darken the atmosphere enough to inhibit photosynthesis, causing disastrous crop failures, widespread famine and massive ecological disruption. The effect would be similar to that of the giant meteor believed to be responsible for the extinction of the dinosaurs. This time, we would be the dinosaurs. Many people are concerned about North Korea’s advancing missile capabilities. Is nuclear war likely in your opinion? At this writing, I think we are closer to a nuclear war than we have been since the early 1960s. In the North Korea case, both Kim Jong-un and President Trump are bullies inclined to escalate confrontations. President Trump lacks impulse control, and there are precious few checks on his ability to initiate a nuclear strike. We have to hope that our generals, both inside and outside the White House, can rein him in. North Korea would most certainly “lose” a nuclear war with the United States. But many millions would die, including hundreds of thousands of Americans currently living in South Korea and Japan (probable North Korean targets). Such vast damage would be wrought in Korea, Japan and Pacific island territories (such as Guam) that any “victory” wouldn’t deserve the name. Not only would that region be left with horrible suffering amongst the survivors; it would also immediately face famine and rampant disease. Radioactive fallout from such a war would spread around the world, including to the U.S. It has been more than 70 years since the last time a nuclear bomb was used in warfare. What would be the effects on the environment and on human health today? To my knowledge, most of the changes in nuclear weapons technology since the 1950s have focused on making them smaller and lighter, and making delivery systems more accurate, rather than on changing their effects on the environment or on human health. So-called “battlefield” weapons with lower explosive yields are part of some arsenals now — but it’s quite unlikely that any exchange between two nuclear powers would stay limited to these smaller, less destructive bombs.

#### Reading Robock et al studies concedes the extinction debate to us:

#### 1] Their models are inaccurate representations.

Walker 18 – Robert Walker, M.Hum in Philosophy from York University, BA in Mathematics from York University, Software Developer, March 6, 2018, [“Debunked: Nuclear Winter and Radioactive Fallout myths,” Debunking Doomsday] Recut Justin

The Robok et all paper is based on a model of a limited exchange of nuclear weapons (say for Pakistan and India) - and this model was 3D and quite detailed. However they didn't model the actual fires themselves, or the way the cities burn, or lofting of soot into the atmosphere or the interactions of the soot with water vapour in the atmosphere. They just started their model with the atmosphere pre-loaded with soot and then ran it forward. It gets its data about the soot in the upper atmosphere from those earlier pre-Kuwaiti fire simulations. See Local Nuclear War, Global Suffering It’s an accurate bit of research based on those assumptions. They did study what would happen if the atmosphere was pre-loaded in that way. What they don’t do is discuss whether or not a nuclear war could lead to such a scenario. That is the very point that lead Carl Sagan and the others to revise their models. So - it has been way over reported as saying more than it does. It just says what would happen if the early views on the soot in the upper atmosphere were correct. It is simply not relevant if those views are incorrect as the other scientists say. It does not attempt an explanation of what happened during the Kuwaiti oil fires. WHAT WOULD REALY HAPPEN? The situation is complicated. Though many fires would break out in cities, some of them may burn for only a short time. This section is based largely on remarks by William Cohen in his 2007 book Would they combine together to make a firestorm? They didn't for Nagasaki which was a city built largely of wood and paper, which would not be permitted with a modern city. That suggests that an airburst like the one for Nagasaki would not produce a firestsorm. They did for Hiroshima but that is probably for other reasons such as widespread use of charcoal burners, as noted in a report back in 1951. But then they might be ground burst weapons, so what difference does that make? What would the end result be in the atmosphere of the complex pattern of many different fires? What would the vertical distribution be? So, there might not even be extensive fires. If there are, then going by the example of the Kuwait fires then most of the carbon was distributed in the first few kilometers and did not reach the stratosphere. Also water vapour is another complicating factor. The fires themselves produce water vapour during combustion and more is taken in from the atmosphere and lofted high where it may form clouds, which then will tend to keep the surface warmer than it would be. Also once the fires stop - and unlike the Kuwaiti oil fires they would not burn for months but be over in a short while like any other large fire (weeks at most if forests catch fire) - the excess moisture rains out taking soot and dust with it. And if forests do catch fire - then it is like the forest fires we get every year - and they do not cause global winter, or indeed, have any widespread cooling effect at all, even when they are extensive and rage for weeks. The whole thing is very complex. Here is William Cohen talking about it in his 2007 book. He is one of the experts who started off by supporting Carl Sagan’s nuclear winter models but doesn't any more. (Many of the pages are made available for public viewing via google books through that link - enough to get a good idea of his main points). He mentions other information about large scale fires such as the Dresden bombing and forest fires which again do not inject large amounts of soot into the stratosphere. So in short it's a wide ranging debate. Some think that some form of a "nuclear autumn" is possible. Many think that there would be no global climate effects at all. The idea of a true nuclear winter, turning summer into winter, is no longer on the table, except for Alan Robok, who as far as I know has not given a good reason based on modern views of how fire plumes work for their pre-loading of the upper atmosphere, the main point at contention. It's still not a literal doomsday if there is a nuclear autumn. It's rather similar to the idea of a volcanic winter after a super volcano, where you'd need to grow different crops, adapted for a colder climate until the temperatures recover. I don't mean that in the sense it is easy of course, but it is possible. It is a very similar situation to the situation after a supervolcano, so I cover that in the section What really happens if Yellowstone erupts as a supervolcano, or if some other supervolcano erupts? But many would say that it wouldn’t even lead to a nuclear autumn. Just a local cooling for as long as the fires last, like the Kuwaiti case, and that as soon as the soot rains out, the whole thing is over.

#### 2] They just assume the smoke ends up the atmosphere.

Seitz 6 – Visiting Scholar at Harvard’s Center of International Affairs (Russell, “The ‘Nuclear Winter’ Meltdown” <http://adamant.typepad.com/seitz/2006/12/preherein_honor.html>) Recut Justin

Dark smoke clouds in the lower atmosphere don’t last long enough to spread across the globe. Cloud droplets and rainfall remove them. Rapidly washing them out of the sky in a matter of days to weeks- not long enough to sustain a global pall. Real world weather brings down particles much as soot is scrubbed out of power plant smoke by the water sprays in smoke stack scrubbers. **Robock acknowledges this- not** even **a single degree of cooling results when soot is released at lower elevations in his models**. The workaround is to inject the imaginary aerosol at truly Himalayan elevations - pressure altitudes of 300 millibar and higher , where the computer model's vertical transport function modules pass it off to their even higher neighbors in the stratosphere , where it does not rain and particles linger. The new studies like the old suffer from the disconnect between a desire to paint the sky black and the vicissitudes of natural history. As with many exercise in worst case models both at invoke rare phenomena as commonplace, claiming it prudent to assume the worst. But the real world is subject to Murphy's lesser known second law- if everything must go wrong, don't bet on it. In 2006 as in 1983 firestorms and forest fires that send smoke into the stratosphere rise to alien prominence in the modelers re-imagined world , but in the real one remains a very different place, where though every month sees forest fires burning areas the size of cities - 2,500 hectares or larger , stratospheric smoke injections arise but once in a blue moon. So how come these neo-nuclear winter models feature so much smoke so far aloft for so long? The answer is simple- the modelers intervened. Turning off vertical transport algorithms may make Al Gore happy- he has bet on reviving the credibility Sagan's ersatz apocalypse , but there is no denying that in some of these scenarios human desire, not physical forces accounts for the vertical hoisting of millions of tons of mass ten vertical kilometers into the sky.to the level at which the models take over , with results at once predictable --and arbitrary. This is not physics, it is computer gamesmanship carried over to a new generation of X-Box. I must now return to getting and vetting the new papers and their references- this has been a prelimnary examination of what the public has been told, and more detailed critiques of the science will doubtless be direected to the journals were the new work appeared . This time round , the details are scarcely worth arguing, because the global frost made famous by the original 'TTAPS' model has disappeared . From the truly frigid 7,000 degree-day "baseine case" advertised as hard science in 1983 to a tepid results of today, "Nuclear Winter has well and truly melted down. The 1986 review of TTAPS reception follows. *The Melting of 'Nuclear Winter'*

### 1NC – AT: Famine

#### No famine:

#### 1] Odd food sources.

David Denkenberger et al. 17 International Journal of Disaster Risk Reduction, Global Catastrophic Risk Institute. 1-5-2017. “Feeding Everyone if the Sun is Obscured and Industry is ~~Disabled~~ [Shut Down].” https://www-sciencedirect-com.proxy.lib.umich.edu/science/article/pii/S2212420916305453%7d

For combined sun blocking and industrial failure scenarios, the reduced output of conventional agriculture would present a threat of causing mass starvation. This study showed that one solution in the short term is extracting edible calories from killed leaves using distributed mechanical processes. Then a constrained food web could be formed where part of the remainder from this could be fed to chickens, and the rest coupled with leaf litter could have mushrooms grown on it. A second group of solutions is growing mushrooms on dead trees and the residue going to cellulose digesting animals such as cattle and rabbits. Typically, in these catastrophes the sun is not blocked completely, so some agriculture would be possible based off of existing farming in extreme environments (e.g. growing UV and cold tolerant crops in the tropics). Furthermore, the cooling climate would cool the upper layer of the ocean, causing upwelling of nutrient-rich deep ocean water. This would facilitate algae growth in the ocean, feeding fish; retrofitting of ships to be sail powered could enable significant fishing. The results of this study show these solutions could enable the feeding of everyone given minimal preparation, and this preparation should be a high priority now.

#### 2] Read their studies skeptically – most say famines kill “billions” and some assert everyone would die but that’s not an assumption warranted.

David S. Stevenson 17. Professor of planetary science at Caltech. 2017. “Agents of Mass Destruction.” The Nature of Life and Its Potential to Survive, Springer, Cham, pp. 273–340. link.springer.com, doi:10.1007/978-3-319-52911-0\_7.

What of humanity? Could it survive? In short, yes, if we are prepared to adapt to a life underground. Here, small communities of people could live on, feeding directly from the remnant biosphere, or from artificially lit greenhouse-cultivated plants. Humanity could persist in a vast underground ark. Here we could continue as a subterranean species, living for billions of years. Life could even become pleasant with enough sub-surface engineering. However, escape would only be permissible if we maintained sufficient technology to reach and re-colonize the frigid surface. With far more limited resources, and with most people likely having been wiped out in the initial freeze, the number of survivors in such caves might be measured in the hundreds. Survival of humanity would depend on whoever survived by maintaining a The Nature of Life and Its Potential to Survive 311 power supply, having food reserves, water reserves and seeds. If you could not maintain the food supply, most survivors would die of starvation within weeks of moving underground.