# TOC r3

## K

**The affirmatives utopian reimagining of politics without explicit praxis to overcome the structural realities of oppression is not a benign political demand – it is empty rhetoric and symbology that reduces the subject to an object of our own sadistic enjoyment.**

**Lundberg 12** Christian O. Lundberg, Director of Cultural Studies and Associate Professor of Rhetoric at The University of North Carolina at Chapel Hill, 2012, Lacan in Public: Psychoanalysis and the Science of Rhetoric, pub. University Alabama Press, p. 165-175 // ahs ss

The first reading, which focuses on Mel Gibson’s *The Passion of the Christ,* takes up the economic exchange between identitarian practices and the ontological register of public making by tracing the metaleptic exchanges that constitute an evangelical Christian public around the metaphor of constitutive violence. i engage in a close reading of *The Passion* and the tropological exchanges it performs in constituting an evangelical public through, around, and beyond the film. The sec ond reading focuses less on a close reading than on characterizing the logic of investment and formal rhetorical processes that animate a specific kind of demand: in this case, the demands of radical antiglobalization protestors to be recognized as dangerous. Thus, my reading of radical anti-globalization protest takes up the political possibilities of the democratic demand, arguing that a purely formal account of the demand eschews attention to the rhetorical production of enjoyment and therefore overstates the political potential both of the democratic demand and a politics of resistance. Here i would like to show how a rhetorically inflected reading of Lacan’s work provides an analytic prescription for public politics that moves beyond enjoyment and aims at the articulation of collective political desire. if the first reading is focused on the relationship between the specific imaginary contents that underwrite a public bond, the sec ond is engaged in understanding the ways that symbolically constituted practices of address and investment imply determinate political consequences. Both of these readings imply critiques of conventional rhetorical practices of interpretation, suggesting an alternative analytic practice of engaging the nexus between trope and affective investment. Thus, these readings form a criti cal-inter pretive couplet: in reading *The Passion,* i would like to demonstrate the shortcomings of fetishizing the imaginary in isolation from the broader symbolic economy that underwrites it; conversely, in reading the demands of radical antiglobalization protest, i would like to show the shortcomings of a purely formal account of the demand that operates in isolation from the practices of enjoyment and the imaginary relations of address under writing radical demands.

**The 1AC’s panicking of individuals in the face of environmental destruction is a futile form of call to action which ends up leaving subjects in psychological denial and relapsing.**

**Koger 15** Susan M Koger - Doctor of Philosophy at Willamette University in the department of Psychology “A Burgeoning Ecopsychological Recovery Movement” [https://www.researchgate.net/publication/288873916\_A\_Burgeoning\_Ecopsychological\_Recovery\_Movement?enrichId=rgreq-4bc629b028b24f511f32a2f046ad416f-XXX&enrichSource=Y292ZXJQYWdlOzI4ODg3MzkxNjtBUzo0ODkzMTMxNTk5MTM0NzJAMTQ5MzY3Mjc1Njc1Mg%3D%3D&el=1\_x\_3&\_esc=publicationCoverPdf] //AHS EMM

**Overconsumption**, particularly by citizens of the United States**, is the basis of most if not all contemporary environmental challenges** (e.g., Kitzes et al., 2008) that comprise the ‘‘Long Emergency’’ (Kunstler, 2005) being considered in this special issue of Ecopsychology. **Our consumer culture and it**s underlying economic imperative **reflects an addiction** (e.g., Guo et al., 2011; LaChance, 2006) **by which people numb out** [i.e., ‘‘psychic numbing’’ (Lifton, 1982)] **or attempt to mitigate their personal insecurities and anxieties through products purported to correct their various flaws, attract friends or mates, or otherwise improve their lives** (Kanner & Gomes, 1995). The predicted catastrophic consequences, including a dangerously changed climate, represent the proverbial ‘‘elephant in the living room,’’ of which most people are at least somewhat aware but are actively or passively ignoring, denying, or suppressing as **they perpetuate the status quo via ‘‘pathological materialism’’ (Clinebell, 1996) and compulsive use of various forms of technology** (‘‘techno-addiction,’’ Glendinning, 1995) **As in any addiction, the fixes obtained** by shopping, eating (including heavily processed and packaged ‘‘junk’’ food), binging on electronic pastimes, or other consumptive behaviors **provide a brief respite from emotional pain, along with a burst of dopamine within the brain’s reward system** (Small, 2009). Yet the emotional hunger and associated cravings are never far behind. In fact, materialism is associated with reduced well-being, including anxiety, depression, and substance use/abuse (Brown & Kasser, 2005; Kasser, 2002), but nonetheless continues to drive acquisitiveness (Otero-Lo´pez et al., 2011). There is little scientific doubt that we as a species are soon to ‘‘hit bottom,’’ if we haven’t already. The forecasts concerning climate change, pollution, and other products of the industrial growth society are terrifying, and the most vulnerable populations, including island and indigenous nations, minorities, the poor, and other species of life are already suffering and will continue to bear the brunt of the impacts.Unfortunately, **the fear activated by** such **bad news is a potent trigger for ‘‘relapse’’ into habitual behaviors that only exacerbate the problems, as are messages that shame and blame the addict;** yet **fear- and guilt-based appeals remain the primary modus operandi of both scientists and environmentalists.** Over a century ago, Yerkes and Dodson (1908) observed that optimal performance occurs at moderate levels of arousal or stress; people can’t solve problems, particularly complex and challenging ones, when they are emotionally overwhelmed (see also Weick, 1984). More recently, Dickinson (2009) applied **the principles of terror management theory to climate change, noting that predictions [predict] about the dire and rapidly approaching consequences are—paradoxically— driving a more intense defense of the ‘‘American way of life’’** (i.e., cultural materialism) and attempts to enhance personal selfesteem, including via status symbols derived from material consumption. The Center for Research on Environmental Decisions (2009) among others has made similar points about the need to consider the emotional impacts of messages intended to persuade people to engage in more sustainable lifestyles (see also Macy, 1995; Macy & Johnstone, 2012; Moser, 2007; Roszak, 1994). Somehow, we need to convey the urgency of the situation and engage and empower our audiences without overwhelming them or sending them into despair or retail therapy

**The aff’s nuclear deterrence focus recreate violence while envisioning a satisfaction of fiat. They craft infinite repetition and obsession with unifying the Real.**

**Matheson 15** – Dr. Matheson is a former debate coach at Harvard University and a current candidate at the Pittsburgh Psychoanalytic Center, His research focuses on intersections of rhetoric, media, and theories of psychoanalysis and deconstruction.“Desired Ground Zeroes: Nuclear Imagination and the Death Drive” [https://cdr.lib.unc.edu/concern/dissertations/6682x4537] // ahs em \*bracketed for grammar

It is worth noting that the Symbolic need not have a permanent structure either. Constellations of tropes are made durable, but not permanent, by what Lundberg calls “affective labor” and I have generally referred to as cathexis. That the belief in determinism persists in some quarters should not discredit the Real or the drive for unmediated experience (i.e., the death drive). Instead, it should highlight our tendency to mistake the durable but artificial structures of the Symbolic for some metaphysical truth of the Real, just as the Bomb is conflated with God. This is also why Lacanian psychoanalysis is consistent with the emerging set of ideas grouped together as speculative realism. Humanity mistakes its reality for the Real, and is only shocked into perspective when the latter is revealed by the inadequacy of the former. As Lacan wrote, To be a psychoanalyst is simply to open your eyes to the evident fact that nothing malfunctions more than human reality…nothing is more stupid than human destiny, that is, that one is always being fooled. Even when one does do something successfully, it is precisely not what one wanted to do. (Psychoses 82) The conflation of Symbolic and Real is at the heart of the Bomb. **Jacques Derrida famously wrote that nuclear war is [has] “fabulously textual,” having no existence outside of the system of language, which we might broaden to representation, or better yet, mediation. Derrida argued that because a total nuclear war has not taken place and its coming would obliterate the archive, it can exist only in its “essential rhetoricity” as a “fantasy” or “fable” that has no referent in reality** (Derrida 24-27). Some, like Masahide Kato, have criticized Derrida on the grounds that nuclear war has taken place in the form of nuclear testing, part of a larger project of radioactive colonialism and destruction of indigenous peoples (Kato). I read this argument a different way. **We do not have to deny that a nuclear war is in some sense ongoing in order to claim that it has never happened.** The kind of nuclear war imagined by Kistiakowsky at Trinity can never come to pass because it means the end of everything on Earth. The radioactive destruction of native nations does not qualify as a “total” nuclear war in the minds of strategists and their peace activist Doppelgängers because **the war they imagine is beyond any material referent, only hinted at by the presence of the Bomb on Earth. It represents both the Real in its punishing materiality and a speculation that could not exist anywhere but the human imagination. The desire to experience the Real is therefore bound to be frustrated. The final advent of the Bomb always seems imminent but is never realized, so obliteration is endlessly deferred.7** **The desire for the Real described in this chapter is thus a source of inevitable failure and frustration.** But it is only one part of the death drive. Unable to meet the Real and still remain extant as discrete subjects, taunted by the continuity that lies over the line of taboo, our desires remain. **We are dislocated and decentered by the Bomb, but we do not accept our being as dust and ashes.** Instead, **the subject desirous of the nuclear Real finds its enjoyment in the opposite fantasy: one of power over the conditions of presence and absence, mastery of contingency and the Real itself. This is the dynamic of Freud’s fort-da game, and in context of nuclear war, it manifests itself in the compulsion to repetitively simulate nuclear destruction.** Atmospheric nuclear testing ended for the USA in 1963. Ultimately only a relatively small number of people witnessed nuclear explosions anywhere in the world, so inevitably awareness and imagination of the Bomb’s overwhelming presence would spread in an increasingly mediated form. **War games as rituals helped to sustain a nuclear priesthood in its (necessarily incomplete) access to the revealed truth of the Bomb after the end of atmospheric nuclear testing** left its followers merely longing to “feel the heat.” **As these technologies gave form to videogames and ostensibly anti-war simulations, they would democratize access to the Bomb and cement its force as an organizing metaphor for the Real.** CHAPTER 2: PLAYING WARGAMES [W]ar and business are conflicts resembling games, and as such, they may be formalized as to constitute games with definite rules. Indeed, I have no reason to suppose that such formalized versions of them are not already being established as models to determine the policies for pressing the Great Push Button and burning the earth clean for a new and less humanly undependable order of things. --Norbert Weiner, God & Golem, Inc. Ipsos Custodes In his “Seminar on the ‘Purloined Letter,’” Jacques Lacan wrote that “it is the symbolic order which is constitutive for the subject,” and that the subject receives “major determination” from “the itinerary of a signifier” (7). One is “possessed” by the signifier, a thrall to its agency: “the signifier’s displacement determines subjects’ acts, destiny, refusals, blindnesses, success, and fate…everything pertaining to the psychological pregiven follows willy-nilly the signifier’s train, like weapons and baggage” (21). One doesn’t have to adopt a fully deterministic attitude towards structure to accept that it is the sign that speaks through us, not vice versa. Human agency does not operate without restriction, but constitutes a negotiation of rules that largely prescribe our behaviors. In the itinerary of an individual life, one can see the influence of accreted structures that give it form. There is perhaps no better example than that of Vice Admiral Tim Giardina. Giardina is the former deputy head of the United States Strategic Command (STRATCOM) at Offutt Air Force Base in Nebraska, the successor to the Strategic Air Command parodied in Dr. Strangelove. In June 2013, Giardina was caught using 74 counterfeit poker chips at a local casino. It was revealed in the ensuing investigation that Giardina had spent almost 1,100 hours gambling in an eighteen-month period. He was such a common sight that other casino regulars remembered him as “Navy Tim,” and recalled comments he had made about the polygraph requirements for U.S. nuclear forces (he was quoted as saying that the purpose is really to find out if one is “having sex with animals or something really crazy”). Giardina was banned from several casinos but continued to play even after being caught with counterfeit chips.8 Following an investigation by the Naval Criminal Investigative Service, he was removed from his post, demoted to Rear Admiral, and reassigned to Washington (Burns). It is not illegal for Navy officers to gamble. Vice Admiral Giardina’s habitual compulsion to play poker did not seem to have any effect on his official duties. Giardina had to be punished not because his actions are out of line with the ethos of the Strategic Command, but precisely because they are not. Giardina enjoyed gambling in poker, but in forging fake chips, he seemed to enjoy gambling on gambling: his was a kind of “meta-gambling,” taking risks on the rules that regulate risks.9 In doing so, Giardina exposed what Slavoj Žižek calls the “obscene supplement” of his system. **Ideological fantasies are maintained by disavowing their central, obscene foundation, a gesture necessary to the function of the fantasy but impossible to acknowledge, for the lack of distance would collapse the whole edifice** (Žižek 35-36). Admiral Cecil Haney, commander of STRATCOM, said in recent Congressional testimony that the core mission of the organization remains to deter attack on the United States. This means minimizing pervasive uncertainty and risk. In Admiral Haney’s words, “America’s nuclear deterrent force provides enduring value to the nation. It has been a constant thread in the geopolitical fabric of an uncertain world, providing a moderating influence on generations of world leaders” (U.S. Senate Comm. on Armed Services, Statement 7). More directly, it is necessary to identify “where we are taking risk and where we cannot accept further risk” (U.S. Senate Comm. on Armed Services, Statement 6). “Risk” and “uncertainty” appear constantly in Haney’s statement, which is a statement for minimizing chance and developing “contingency plans” to control the consequences of unforeseen events. The disturbance of Symbolic order by the contingency of the Real is met with an attempt to restore order, to respond to chance with law. Lacan describes this dynamic as the interplay of tuché and automaton: Where do we meet this real? For what we have in the discovery of psycho-analysis is an encounter, an essential encounter—and appointment to which we are always called with a real that eludes us… First, the tuché, which we have borrowed…from Aristotle, who uses it in his search for cause. We have translated it as the encounter with the real. The real is beyond the automaton, the return, the coming-back, the insistence of the signs, by which we see ourselves governed by the pleasure principle. The real is that which always lies behind the automaton…it is this that is the object of [Freud’s] concern. (Lacan, Four Fundamental Concepts, 53-54, italics in original) This is the central element of the repetition compulsion**. Driven to make our encounter with the Real, we are perpetually disappointed, but the Symbolic world of reality abhors a vacuum. Automaton describes the endless attempts to reach the Real which are doomed to failure but cannot be surrendered, so are repeated again and again. These repetitive behaviors thus develop an aspect of order, and are, paradoxically, orderly 76 attempts to reach the chaos of contingency.** They are also linked by Lacan gambling, death, and signification (“Purloined Letter” 28-29). **Nuclear deterrence can be read in this frame as an attempt to secure the world against the contingency of the Real, the uncertainty of nuclear war. It is** the STRATCOM automaton’s answer to the chaos of the Bomb’s tuché. But **the attempt to restore order has at its heart a desire to encounter the Real.** In a history of nuclear defense intellectuals, Fred Kaplan described them in the 1980s at the height of their power having come with the mission “to impose order,” but lacking any means to control the wild abandon of the Bomb in a hypothetical war for which there was no precedent, “in the end, chaos still prevailed” (Kaplan 391). **Desire is the motive force, and that what we desire cannot be attained is what requires repetition.** When the chaos of tuché reigns, automaton does not surrender, but comes to be an end in itself, a site of investment. **Repetition itself becomes enjoyable. In repeatedly simulating nuclear war, defense intellectuals who could not experience the Real of nuclear violence could enjoy the illusion of mastery over the terror and fascination inspired by the Real by appearing to simulate the conditions of presence and absence**—in this case, the presence of the world-for-us and its absence in the Bomb’s inferno. Langdon Winner distinguishes between risk (a term prevalent in both nuclear war and poker) and threat or hazard on these grounds: risk always has an implied benefit to it, an element of desire and an opportunity for control (145). There is little empirical basis for nuclear war simulations and the calculations of probability they rely on, so nuclear war plans always require a good deal of faith, and thus to adopt them is a risk—a calculation of both hazard and reward (Ghamari-Tabrizi 8). Their parameters are set arbitrarily by the personnel who design them. In other words, they are games of 77 chance in which we also manipulate the rules. This is the obscene supplement of nuclear deterrence that Vice Admiral Giardina could not be allowed to reveal: **we don’t just repeat nuclear simulations again and again because we think that they will someday be perfect. War games are fun, and we don’t always care about the rules.** Poker, after all, was rumored to be the genesis of game theory at the RAND Corporation, prominent modelers of nuclear war, and was a favorite pastime of the defense intellectuals who sought to tame the world with human reason (Arbella 51-53).

**The 1AC is an endorsement of a never-ending quest for knowledge, a striving toward the material and calculable, inseparable from an unconscious paranoia that eats at the subject as its lifelong quest for meaning is for not. We sacrifice the very nature of knowledge while disintegrating our psychic integrity and crushing any value to life.**

**Mills,** Mills, Jon. “Lacan on Paranoiac Knowledge.” *Dr. Jon Mills Psychoanalyst Philosopher Psychotherapy Psychologist*, Process Psychology, www.processpsychology.com/new-articles/Lacan-PP-revised.htm.When these aspects of human life are broadly considered, it becomes easier to see how our linguistic-epistemological dependency has paranoiac *a priori* conditions. From Freud to Klein and Lacan, **knowledge is a dialectical enterprise** that stands **in relation to fear--to the horror of possibility**--the possibility of the *not*: **negation**, conflict, **and suffering saturate our very beings, beings whose self-identities are linguistically constructed. The relation between knowledge and paranoia is** a **fundamental** one, and perhaps no where do we see this dynamic so poignantly realized than in childhood. From the 'psychotic-like' universe of the newborn infant (e.g. see Klein, 1946), to the relational deficiencies and selfobject failures that impede the process of human attachment, to the primal scene and/or subsequent anxieties that characterize the Oedipal period, leading to the inherent rivalry, competition, and overt aggression of even our most sublimated object relations, -- fear, trepidation, and dread hover over the very process of knowing itself. **What is paranoid is that which stands in relation to opposition**, hence that which is **alien to the self. Paranoia is** not simply that which is beyond the rational mind, but it is **a generic process of *nosis***--**'I take thought, I perceive,** I intellectually **grasp,** I **apprehend'**--hence have ***apprehension* for what I encounter in consciousness**. With qualitative degrees of difference, we are all paranoid simply because others hurt us, a lesson we learn in early childhood. **Others hurt us with their knowledge**, with what they say, as do we. **And we hurt knowing. 'What will the Other do next?' We are both pacified yet cower in extreme trembling over what we may and may not know**--what we may and may not find out; and this is why **our relation to knowledge is fundamentally paranoiac**. For Aristotle (1958), "all men by nature desire to know" (p. 108). **This philosophic attitude is kindled by our educational systems** perhaps informing the popular adage, **'knowledge is power.' But whose?** There is no doubt that the acquisition of knowledge involves a power differential, but what if **knowledge itself is seen as too powerful because it threatens our psychic integrity**? In the gathering of **knowledge** there **is** simultaneously **a covering-over**, a blinding **to what one is exposed to**; moreover, **an erasure**. I ~~know~~ (No)! Unequivocally, **there are things we desire to know nothing about at all; hence the psychoanalytic attitude places unconscious defense--negation**/denial and repression--**in the foreground of human knowledge, the desire not to know. When we engage epistemology**--the question and meaning of knowledge--**we are intimately confronted with paranoia**. For example, there is nothing more disturbing when after a lifetime of successful inquiry into a particular field of study it may be entirely debunked by the simple, arrogant question: 'How do you know?' **Uncertainty, doubt, ambiguity, hesitation, insecurity--anxiety!: the process of knowing exposes us** all **to immense discomfort. And any epistemological claim is equally a metaphysical one**. Metaphysics deals with first principles, the fundamental, ultimate questions that preoccupy our collective humanity: 'What is real? Why do I exist? Will I *really* die?' Metaphysics is paranoia--and we are all terrified by its questions: 'Is there God, freedom, agency, immortality?' *Is? Why? Why not? Yes but why?!* **When the potential meaning and quality of one's personal existence hinge on the response to** these **questions, it is no wonder** why most **theists say only God is omniscient**. And although Freud (1927) tells us that the very concept of **God is an illusory derivative** of the Oedipal situation--a wish to be rescued and comforted from the anxieties of childhood helplessness, He--our exalted Father in the sky--is ***always* watching**, judging. Knowing this, the true believer has every reason to be petrified. For those in prayer or in the madhouse, **I can think of no greater paranoia**.

**The alternative is to traverse the fantasy—this requires internalizing desire in order to reject the master signifier. Only through accepting lack as a constitutive feature of the human subject can we escape this never-ending desire for wholeness.**

**McGowan ‘13** “Enjoying What We Don’t Have: The Political Project of Psychoanalysis” (Todd, Assoc. Prof. of Film and Television Studies @ U. of Vermont) AHS// EMM

Like philosophy and Marxism, psychoanalysis also has a history of opposing itself to fantasy**. Its basic trajectory appears to involve curing the patient of an excessive investment in fantasy life.** It seems as if neurotics come to psychoanalysts suffering from their fantasies and that the sessions allow the neurotics to gain some distance from these fantasies and thereby see them for what they are. Gaining purchase on one’s fantasy life — or **simply becoming aware that one is fantasizing — is one predominant image of the psychoanalytic process.** My own therapy, for instance, consisted in gaining awareness of the nonexistence of normal people. The analyst’s unremitting silence in response to my questions about how everyone else would react in similar situations ultimately allowed me to recognize the obvious fact that there was no such thing as a normal reaction or normal person. I was invested in the fantasy of normality without realizing that it was a fantasy, and analysis laid this fantasy bare and thus facilitated a disinvestment in it. In this way, like so many patients I felt as if I was able to move beyond a barrier that I did not even know existed. **Many theorists who recognize the political importance of psychoanalysis do so because of its ability to combat fantasy.** For example, this dimension of psychoanalysis leads Yannis Stavrakakis, in Lacan and the Political, to **see the contemporary political task of psychoanalysis as one of “traversing the fantasy of utopian thought.”**25 In the vein of the philosopher or the Marxist, Stavrakakis sees a danger in the way that **fantasy hides the gap that haunts the symbolic order.** As he notes, “**Fantasy negates the real by promising to ‘realise’ it, by promising to close the gap between the real and reality, by repressing the discursive nature of reality’s production.”**26 Here, Stavrakakis sees the ideological dimension of fantasy, and psychoanalysis for him facilitates this recognition and provides a way to dissolve fantasy’s power. This kind of psychoanalytic politics evinces the attitude toward fantasy that both modern philosophy and Marxism take up, and this attitude certainly seems faithful to psychoanalytic practice and its attempt to assist the subject in “traversing the fantasy.” But despite the seeming antipathy directed toward fantasy in its very practice, for psychoanalysis the political valence of fantasy is not so unambiguous as it is for philosophy and Marxism. To unlock fully the political potential of psychoanalysis, we must turn our attention to the positive significance that psychoanalysis bestows on fantasy. Both philosophy and Marxism are, of course, right about the role that fantasy has in disguising our social situatedness. But the problem with this conception of politics is that, by focusing on what fantasy conceals, it fails to consider what fantasy reveals. It is at this point — the point of what fantasy reveals to us — that we can see the political significance of psychoanalysis. The value of psychoanalysis in relation to philosophy lies in the ability of psychoanalysis to grasp the political importance of fantasy in a way that philosophy and Marxism have been unable to do. At the same time that **fantasy disguises our subjection to the signifier and makes it difficult for us to experience this subjection, it also has the effect of making otherwise impossible experiences possible.28 Fantasy offers the subject a transcendent experience, and this transcendence, despite its illusory quality, has a political content. It represents a moment at which the subject is no longer bound by the limitations of the symbolic structure that ordinarily constrain it.** As such, this moment of fantasmatic transcendence poses for the subject a fundamental challenge to the authority of that symbolic structure. In fact, the radical import of fantasy is located in precisely the same feature that causes fantasy to further ideology: **the illusions of fantasy keep subjects content with the ruling symbolic structure,** but they also provide a venue for thinking beyond that structure**.** In contrast to modern philosophy and Marxism, psychoanalysis permits us to see this political complexity inhering within the structure of fantasy. From the beginnings of psychoanalysis, this respect for fantasy makes itself felt. When it comes to the psyche of the subject in analysis, the fantasy has more significance than actual memories. For instance, Freud’s early essay “Screen Memories” describes early childhood memories as screens for unconscious fantasies. The sexual content of the fantasy, Freud contends, can only appear through the vehicle of a genuine memory. He writes: “It is precisely the coarsely sensual element in the phantasy which explains why it . . . must be content to find its way allusively and under a flowery disguise into a childhood scene.”29 Freud’s point here is not that we must subtract the distortion of fantasy from the memory in order to discover what actually happened but that what actually happened has far less psychic importance than the fantasy it conceals.The subject uses the memory of a genuine scene to access and at the same time disguise a fantasy. Fantasy distorts, but its distortion embodies subjectivity itself and transports the subject outside the constraints of actual experience, which is why Freud values it over memory. This valuation is part of the implicit political project inhering within psychoanalytic thought, and it distances the politics of psychoanalysis from other political projects rooted in the Enlightenment. Because it allows the subject an experience of transcendence beyond the limits of the ruling symbolic structure, fantasy has tangible political benefits. These benefits can be characterized in three related ways: (1) through fantasy, we experience alternatives to the ruling symbolic structure that remain unthinkable within this structure; (2) fantasy facilitates an encounter with traumatic disruption that our everyday reality guards against; and (3) **fantasy makes evident the link between loss and enjoyment, allowing us to conceive of a politics that embraces loss rather than attempting to escape it.** These political dimensions of fantasy all manifest themselves in the thought of Freud and Lacan, even though neither conceives of fantasy (or psychoanalysis as a whole) in a political sense.

**The ROTB is to endorse the debater who best performatively and methodologically embrace the lack.**

**Ruti 10** Mari Ruti. (2010). *Winnicott with Lacan: Living Creatively in a Postmodern World. American Imago, 67(3), 353–374.[*doi:10.1353/aim.20 [sci-hub.tw/10.1353/aim.2010.0016](https://sci-hub.tw/10.1353/aim.2010.0016)] [https://muse.jhu.edu/article/414021/pdf] // ahs emi

Let us consider Lacan first.1 As we know, Lacan’s theory of subject formation is premised on the notion of foundational lack or alienation. The transition from the Imaginary to the Symbolic—from preoedipal drives to the collective social space of signification and meaning production—is, for Lacan, a process of primordial wounding in the sense that the subject is gradually brought face to face with its own lack. While the internalization of the signifier brings the subject into existence as a creature of desire (thereby giving it access to a fully “human” existence), it simultaneously reveals that the surrounding world is much larger and more powerful than any individual subject could ever be—that the self is always merely a minor participant in a system of signification that operates quite independently of its “private” passions and preoccupations. In this manner, the signifier shatters the fantasies of omnipotence and wholeness that characterize the emerging ego of the mirror stage. One could, then, say that, in the Lacanian scenario, we purchase our social subjectivity at the price of narcissistic injury in the sense that we become culturally intelligible beings only insofar as we learn to love ourselves a bit less.It is worth noting right away that one of the things that drives a wedge between Lacan and Winnicott is that while Winnicott regards the ego as what allows the subject to enter into an increasingly complex relationship to the world, Lacan associates it primarily with narcissistic and overconfident fantasies that lend an illusory consistency to the subject’s psychic life. Lacan explains that the subject’s realization that it is not synonymous with the world, but rather a frail and faltering creature that needs continuously to negotiate its position in the world, introduces an apprehensive state of want and restlessness that it finds difficult to tolerate and that it consequently endeavors to cover over by fantasy formations. In other words, because lack is devastating to admit to—because the subject experiences [lack] it as a debilitating wound—it is disposed to seek solace in fantasies that allow it to mask and ignore the reality of this lack. Such fantasies alleviate anxiety and fend off the threat of fragmentation because they enable the subject to consider itself as more unified and complete than it actually is; by concealing the traumatic split, tear, or rift within the subject’s psychic life, they render its identity (seemingly) reliable and immediately readable. As a result, they all too easily lead the subject to believe that it can come to know itself in a definitive fashion, thereby preventing it from recognizing that “knowing” one version of itself may well function as a defense against other, perhaps less reassuring, versions. One consequence of the subject’s dependence on such egogratifying fantasies is that they mislead it to seek self-fulfillment through the famous objet petit a—the object cause of desire that the subject believes will return to it the precious sense of wholeness that it imagines having lost.2 In this scenario, the subject searches for meaning outside of itself, in an object of desire that seems to contain the enigmatic objet a. Lacan’s goal, in this context, is to enable the subject to perceive that this fantasmatic quest for secure foundations is a waste of its psychic energies. His aim is to convince the subject that the objet a will never give it the meaning of its existence, but will, instead, lead it down an ever-**widening spiral of existential deadends.** How, then, does the Lacanian subject find meaning in its life? Lacan’s answer is that it is only by accepting lack as a precondition of its existence—by welcoming and embracing the primordial wound inflicted by the signifier—that the subject can begin to weave the threads of its life into an existentially evocative tapestry. It is, in other words, only by exchanging its ego for language, its narcissistic fantasies for the meaning making capacities of the signifier, that the subject can begin to ask constructive questions about its life.3 For Lacan, there are of course no definitive answers to these questions. But this does not lessen the value of being able to ask them. The fact that there is no stable truth of being does not prevent the subject from actively and imaginatively participating in the production of meaning.

**Prefer over comp worlds: A) recognition and embrace of our shared lack is the basis point of collective identity to form political change in the first place. B) Everything is constrained by the lack, even the flow because communication will always be coopted. C) most reciprocal because u cant embrace the lack more or less- it’s a binary so its more reciprocal and resolvable because one of us cant embrace more.**

**ADD LINKS**

## DA

**Uniqueness: Industrial society and a growing population of humans make extinction inevitable- famine, biodiversity loss, and much more.**

Corey J. A **Bradshaw et al** (16 other people), January 13, 20**21**, frontiers in conservation science, “Underestimating the Challenges of Avoiding a Ghastly Future”, [https://www.frontiersin.org/articles/10.3389/fcosc.2020.615419/full] mc

**Humanity is causing a rapid loss of** biodiversity and, with it, **Earth's ability to support** complex **life**. But the mainstream is having difficulty grasping the magnitude of this loss, despite the steady erosion of the fabric of human civilization (Ceballos et al., 2015; IPBES, 2019; Convention on Biological Diversity, 2020; WWF, 2020). While suggested solutions abound (Díaz et al., 2019), the current scale of their implementation does not match the relentless progression of biodiversity loss (Cumming et al., 2006) and other existential threats tied to the continuous expansion of the human enterprise (Rees, 2020). Time delays between ecological deterioration and socio-economic penalties, as with climate disruption for example (IPCC, 2014), impede recognition of the magnitude of the challenge and timely counteraction needed. In addition, disciplinary specialization and insularity encourage unfamiliarity with the complex adaptive systems (Levin, 1999) in which problems and their potential solutions are embedded (Selby, 2006; Brand and Karvonen, 2007). Widespread ignorance of human behavior (Van Bavel et al., 2020) and the incremental nature of socio-political processes that plan and implement solutions further delay effective action (Shanley and López, 2009; King, 2016). We summarize the state of the natural world in stark form here to help clarify the gravity of the human predicament. We also outline likely future trends in biodiversity decline (Díaz et al., 2019), climate disruption (Ripple et al., 2020), and human consumption and population growth to demonstrate the near certainty that these problems will worsen over the coming decades, with negative impacts for centuries to come. Finally, we discuss the ineffectiveness of current and planned actions that are attempting to address the ominous erosion of Earth's life-support system. Ours is not a call to surrender—we aim to provide leaders with a realistic “cold shower” of the state of the planet that is essential for planning to avoid a ghastly future. Biodiversity Loss Major **changes in the biosphere are** directly **linked to the growth of human systems** (summarized in Figure 1). While the rapid loss of species and populations differs regionally in intensity (Ceballos et al., 2015, 2017, 2020; Díaz et al., 2019), and most species have not been adequately assessed for extinction risk (Webb and Mindel, 2015), certain global trends are obvious. Since the start of agriculture around 11,000 years ago, the biomass of **terrestrial vegetation has been halved** (Erb et al., 2018), with a corresponding loss of >20% of its original biodiversity (Díaz et al., 2019), together denoting that >70% of the Earth's land surface has been altered by Homo sapiens (IPBES, 2019). There have been >**700** documented **vertebrate** (Díaz et al., 2019) **and ~600 plant** (Humphreys et al., 2019) **species extinctions** over the past 500 years, with many more species clearly having gone extinct unrecorded (Tedesco et al., 2014). Population sizes of vertebrate species that have been monitored across years have declined by an average of 68% over the last five decades (WWF, 2020), with certain population clusters in extreme decline (Leung et al., 2020), thus presaging the imminent extinction of their species (Ceballos et al., 2020). Overall, perhaps 1 million species are threatened with extinction in the near future out of an estimated 7–10 million eukaryotic species on the planet (Mora et al., 2011), with around 40% of plants alone considered endangered (Antonelli et al., 2020). Today, the global biomass of wild mammals is <25% of that estimated for the Late Pleistocene (Bar-On et al., 2018), while insects are also disappearing rapidly in many regions (Wagner, 2020; reviews in van Klink et al., 2020). **Freshwater and marine environments have** also **been** severely **damaged**. Today there is <15% of the original wetland area globally than was present 300 years ago (Davidson, 2014), and >75% of rivers >1,000 km long no longer flow freely along their entire course (Grill et al., 2019). More than **two-thirds of the oceans have been compromised** to some extent by human activities (Halpern et al., 2015), live coral cover on reefs has halved in <200 years (Frieler et al., 2013), seagrass extent has been decreasing by 10% per decade over the last century (Waycott et al., 2009; Díaz et al., 2019), kelp forests have declined by ~40% (Krumhansl et al., 2016), and the biomass of large predatory fishes is now <33% of what it was last century (Christensen et al., 2014). With such a rapid, catastrophic loss of biodiversity, the ecosystem services it provides have also declined. These include inter alia reduced carbon sequestration (Heath et al., 2005; Lal, 2008), reduced pollination (Potts et al., 2016), soil degradation (Lal, 2015), poorer water and air quality (Smith et al., 2013), more frequent and intense flooding (Bradshaw et al., 2007; Hinkel et al., 2014) and fires (Boer et al., 2020; Bowman et al., 2020), and compromised human health (Díaz et al., 2006; Bradshaw et al., 2019). As telling indicators of how much biomass humanity has transferred from natural ecosystems to our own use, of the estimated 0.17 Gt of living biomass of terrestrial vertebrates on Earth today, most is represented by livestock (59%) and human beings (36%)—only ~5% of this total biomass is made up by wild mammals, birds, reptiles, and amphibians (Bar-On et al., 2018). As of 2020, the overall material output of human endeavor exceeds the sum of all living biomass on Earth (Elhacham et al., 2020). Sixth Mass Extinction A mass extinction is defined as a loss of ~75% of all species on the planet over a geologically short interval—generally anything <3 million years (Jablonski et al., 1994; Barnosky et al., 2011**). At least five major extinction events have occurred since the Cambrian** (Sodhi et al., 2009), the most recent of them 66 million years ago at the close of the Cretaceous period. **The background rate of extinction since then has been 0.1 extinctions million species−1 year−1 (Ceballos et al., 2015), while estimates of today's extinction rate are orders of magnitude greater (Lamkin and Miller, 2016). Recorded vertebrate extinctions since the 16th century—the mere tip of the true extinction iceberg—give a rate of extinction of 1.3 species year−1, which is conservatively >15 times the background rate** (Ceballos et al., 2015). The IUCN estimates that some 20% of all species are in danger of extinction over the next few decades, which greatly exceeds the background rate. That **we are already on the path of a sixth major extinction is now scientifically undeniable** (Barnosky et al., 2011; Ceballos et al., 2015, 2017). Ecological Overshoot: Population Size and Overconsumption The global human population has approximately doubled since 1970, reaching nearly 7.8 billion people today (prb.org). While some countries have stopped growing and even declined in size, world average fertility continues to be above replacement (2.3 children woman−1), with an average of 4.8 children woman−1 in Sub-Saharan Africa and fertilities >4 children woman−1 in many other countries (e.g., Afghanistan, Yemen, Timor-Leste). The 1.1 billion people today in Sub-Saharan Africa—a region expected to experience particularly harsh repercussions from climate change (Serdeczny et al., 2017)—is projected to double over the next 30 years. By 2050, the world population will likely grow to ~9.9 billion (prb.org), with growth projected by many to continue until well into the next century (Bradshaw and Brook, 2014; Gerland et al., 2014), although more recent estimates predict a peak toward the end of this century (Vollset et al., 2020). Large **population size and continued growth are implicated in many** societal **problems**. The impact of population growth, combined with an imperfect distribution of resources, leads to massive food insecurity. By some estimates, **700–800 million people are starving and 1–2 billion are** micronutrient-**malnourished** **and** **unable to function fully, with** **prospects of many more food problems in the near future** (Ehrlich and Harte, 2015a,b). **Large populations and their continued growth are also drivers of soil degradation and biodiversity loss (Pimm et al., 2014). More people means that more synthetic compounds and dangerous throw-away plastics (Vethaak and Leslie, 2016) are manufactured, many of which add to the growing toxification of the Earth (Cribb, 2014). It also increases chances of pandemics (Daily and Ehrlich, 1996b) that fuel ever-more desperate hunts for scarce resources (Klare, 2012).** Population growth is also a factor in many social ills, from crowding and joblessness, to deteriorating infrastructure and bad governance (Harte, 2007). There is mounting evidence that when populations are large and growing fast, they can be the sparks for both internal and international conflicts that lead to war (Klare, 2001; Toon et al., 2007). The multiple, interacting causes of civil war in particular are varied, including poverty, inequality, weak institutions, political grievance, ethnic divisions, and environmental stressors such as drought, deforestation, and land degradation (Homer-Dixon, 1991, 1999; Collier and Hoeer, 1998; Hauge and llingsen, 1998; Fearon and Laitin, 2003; Brückner, 2010; Acemoglu et al., 2017). Population growth itself can even increase the probability of military involvement in conflicts (Tir and Diehl, 1998). Countries with higher population growth rates experienced more social conflict since the Second World War (Acemoglu et al., 2017). In that study, an approximate doubling of a country's population caused about four additional years of full-blown civil war or low-intensity conflict in the 1980s relative to the 1940–1950s, even after controlling for a country's income-level, independence, and age structure. Simultaneous **with population growth, humanity's consumption** as a fraction **of Earth's** regenerative **capacity has grown from ~ 73% in 1960 to 170% in 2016** (Lin et al., 2018), with substantially greater per-person consumption in countries with highest income. With COVID-19, this overshoot dropped to 56% above Earth's regenerative capacity, which means that **between January and August 2020, humanity consumed as much as Earth can renew in the entire year** (overshootday.org). While inequality among people and countries remains staggering, the global middle class has grown rapidly and exceeded half the human population by 2018 (Kharas and Hamel, 2018). Over 70% of all people currently live in countries that run a biocapacity deficit while also having less than world-average income, excluding them from compensating their biocapacity deficit through purchases (Wackernagel et al., 2019) and eroding future resilience via reduced food security (Ehrlich and Harte, 2015b). The consumption rates of high-income countries continue to be substantially higher than low-income countries, with many of the latter even experiencing declines in per-capita footprint (Dasgupta and Ehrlich, 2013; Wackernagel et al., 2019).

**Link: Nuclear war would collapse civilization through nuclear famine but ensure that a number of humans survive.**

Shaun **Tandon**, December 10, 20**13**, PHYS ORG, “Nuclear war would 'end civilization' with famine, study says”, [https://phys.org/news/2013-12-nuclear-war-civilization-famine.html] mc

**A nuclear war** between India and Pakistan **would** set off a global famine that could kill two billion people and effectively **end human civilization**, a study said Tuesday. Even if limited in scope, **a conflict** with nuclear weapons **would wreak havoc** in the atmosphere **and devastate crop yields**, with the effects multiplied as global food markets went into turmoil, the report said. The Nobel Peace Prize-winning International Physicians for the Prevention of Nuclear War and Physicians for Social Responsibility released an initial peer-reviewed study in April 2012 that predicted a nuclear famine could kill more than a billion people. In a second edition, the groups said they widely underestimated the impact in China and calculated that the world's most populous **country would face severe food insecurity**. "A billion people dead in the developing world is obviously a catastrophe unparalleled in human history. But then if you add to that the possibility of another 1.3 billion people in China being at risk, **we are entering something that is** clearly **the end of civilization**," said Ira Helfand, the report's author. Helfand said that the study looked at India and Pakistan due to the longstanding tensions between the nuclear-armed states, which have fought three full-fledged wars since independence and partition in 1947. But Helfand said that the planet would expect a similar apocalyptic impact **from any limited nuclear war**. Modern nuclear weapons are far more powerful than the US bombs that killed more than 200,000 people in Hiroshima and Nagasaki in 1945. "With a large war between the United States and Russia, we are talking about the possible—not certain, but possible—extinction of the human race. "In this kind of war, biologically **there are going to be people surviving somewhere on the planet** but the chaos that would result from this will dwarf anything we've ever seen," Helfand said. The study said that the **black carbon** aerosol particles kicked into the atmosphere by a South Asian nuclear war **would reduce US corn and soybean production** by around 10 percent over a decade. **The particles would also reduce China's rice production** by an average of 21 percent over four years and by another 10 percent over the following six years. The updated study also found **severe effects on China's wheat, which is vital to the country despite its association with rice**. China's wheat production would plunge by 50 percent the first year after the nuclear war and would still be 31 percent below baseline a decade later, it said. The study said it was impossible to estimate the exact impact of nuclear war. He called for further research, voicing alarm that policymakers in nuclear powers were not looking more thoroughly at the idea of a nuclear famine.

**Internal Link: Isolated island populations repopulate Earth solves nuclear winter led extinction.**

**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)

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

**Internal link 2: Pandemics don’t cause extinction but kill enough people to point that industrial society cannot recover.**

Dennis **Pamlin &** Stuart **Armstrong 15**, Dennis Pamlin, Executive Project Manager Global Risks, Global Challenges Foundation, and Stuart Armstrong, James Martin Research Fellow, Future of Humanity Institute, Oxford Martin School, University of Oxford, February 2015, “Global Challenges: 12 Risks that threaten human civilization: The case for a new risk category,” Global Challenges Foundation, p.30-93, [<https://api.globalchallenges.org/static/wp-content/uploads/12-Risks-with-infinite-impact.pdf>] mc

A pandemic (from Greek πᾶν, pan, “all”, and δῆμος demos, “people”) is an epidemic of infectious disease that has spread through human populations across a **large region**; for instance **several continents**, or even **worldwide**. Here only worldwide events are included. A widespread endemic disease that is stable in terms of how many people become sick from it is not a pandemic. 260 84 Global Challenges – Twelve risks that threaten human civilisation – The case for a new category of risks 3.1 Current risks 3.1.4.1 Expected impact disaggregation 3.1.4.2 Probability Influenza subtypes266 Infectious diseases have been one of the **greatest cause**s **of mortality in history**. Unlike many other global challenges pandemics have happened recently, as we can see where reasonably good data exist. Plotting historic epidemic fatalities on a log scale reveals that these tend to follow a **power law with a small exponent**: many plagues have been found to follow a power law with exponent 0.26.261 These kinds of power laws are **heavy-tailed**262 to a significant degree.263 In consequence most of the fatalities are accounted for by the **top few events**.264 If this law holds for future pandemics as well,265 then the majority of people who will die from epidemics will likely die from the **single largest pandemic**. Most epidemic fatalities follow a power law, with some extreme events – such as the Black Death and Spanish Flu – being even more deadly.267 There are other grounds for suspecting that such a highimpact epidemic will have a greater probability than usually assumed. All the features of an extremely devastating disease **already exist in nature**: essentially **incurable** (Ebola268), nearly always **fatal** (rabies269), **extremely infectious** (common cold270), and **long incubation periods** (HIV271). If a pathogen were to emerge that somehow **combined these features** (and influenza has demonstrated **antigenic shift**, the ability to combine features from different viruses272), its death toll would be extreme. Many relevant features of the world have changed considerably, making past comparisons problematic. The modern world has better sanitation and medical research, as well as national and supra-national institutions dedicated to combating diseases. Private insurers are also interested in modelling pandemic risks.273 Set against this is the fact that **modern transport** and **dense human population** allow infections to spread much more rapidly274, and there is the potential for urban slums to serve as breeding grounds for disease.275 Unlike events such as nuclear wars, pandemics would not damage the world’s infrastructure, and initial survivors would likely be resistant to the infection. And there would probably be survivors, if only in isolated locations. Hence the risk of a civilisation collapse would come from the **ripple effect** of the fatalities and the policy responses. These would include **political and agricultural disruption** as well as **economic dislocation** and damage to the world’s **trade network** (including the food trade). **Extinction risk** is only possible if the aftermath of the epidemic **fragments and diminishes human society** to the extent that recovery becomes impossible277 before humanity succumbs to other risks (such as climate change or further pandemics). Five important factors in estimating the probabilities and impacts of the challenge: 1. What the true probability distribution for pandemics is, especially at the tail. 2. The capacity of modern international health systems to deal with an extreme pandemic. 3. How fast medical research can proceed in an emergency. 4. How mobility of goods and people, as well as population density, will affect pandemic transmission. 5. Whether humans can develop novel and effective anti-pandemic solutions.

#### ential risk

**Impact: Industrial civilization wouldn’t recover.**

Lewis **Dartnell 15**. UK Space Agency research fellow at the University of Leicester, working in astrobiology and the search for microbial life on Mars. His latest book is The Knowledge: How to Rebuild Our World from Scratch. 04-13-15. "Could we reboot a modern civilisation without fossil fuels? – Lewis Dartnell." Aeon. https://aeon.co/essays/could-we-reboot-a-modern-civilisation-without-fossil-fuels

Imagine that the world as we know it ends tomorrow. There’s a global catastrophe: a pandemic virus, an asteroid strike, or perhaps a nuclear holocaust. The vast majority of the human race perishes. Our civilisation collapses. The post-apocalyptic survivors find themselves in a devastated world of decaying, deserted cities and roving gangs of bandits looting and taking by force. Bad as things sound, that’s not the end for humanity. We bounce back. Sooner or later, peace and order emerge again, just as they have time and again through history. Stable communities take shape. They begin the agonising process of rebuilding their technological base from scratch. But here’s the question: how far could such a society rebuild? Is there any chance, for instance, that a post-apocalyptic society could reboot a technological civilisation? Let’s make the basis of this thought experiment a little more specific. Today, we have already consumed the **most** easily drainable **crude oil** and, particularly in Britain, much of the shallowest, most readily mined deposits of coal. **Fossil fuels are central** to the organisation of modern industrial society, just as they were central to its development. Those, by the way, are distinct roles: even if we could somehow do without fossil fuels now (which we can’t, quite), it’s a different question whether we could have got to where we are without ever having had them. So, would a society starting over on a planet stripped of its fossil fuel deposits have the chance to progress through its own Industrial Revolution? Or to phrase it another way, what might have happened if, for whatever reason, the Earth had never acquired its extensive underground deposits of coal and oil in the first place? Would our progress necessarily have halted in the 18th century, in a pre-industrial state? It’s easy to underestimate our current dependence on fossil fuels. In everyday life, their most visible use is the petrol or diesel pumped into the vehicles that fill our roads, and the coal and natural gas which fire the power stations that electrify our modern lives. But we also rely on a range of different industrial materials, and in most cases, high temperatures are required to transform the stuff we dig out of the ground or harvest from the landscape into something useful. You can’t smelt metal, make glass, roast the ingredients of concrete, or synthesise artificial fertiliser without a lot of heat. It is **fossil fuels** – coal, gas and oil – that provide most of this thermal energy. In fact, the problem is even worse than that. Many of the chemicals required in bulk to run the modern world, from pesticides to plastics, derive from the diverse organic compounds in crude oil. Given the dwindling reserves of crude oil left in the world, it could be argued that the most wasteful use for this limited resource is to simply burn it. We should be carefully preserving what’s left for the vital repertoire of valuable organic compounds it offers. But my topic here is not what we should do now. Presumably everybody knows that we must transition to a low-carbon economy one way or another. No, I want to answer a question whose interest is (let’s hope) more theoretical. Is the emergence of a technologically advanced civilisation necessarily contingent on the easy availability of ancient energy? Is it possible to build an industrialised civilisation without fossil fuels? And the answer to that question is: maybe – but it would be extremely difficult. Let’s see how. We’ll start with a natural thought. Many of our alternative energy technologies are already highly developed. Solar panels, for example, represent a good option today, and are appearing more and more on the roofs of houses and businesses. It’s tempting to think that a rebooted society could simply pick up where we leave off. Why couldn’t our civilisation 2.0 just start with renewables? Well, it could, in a very limited way. If you find yourself among the survivors in a post-apocalyptic world, you could scavenge enough working solar panels to keep your lifestyle electrified for a good long while. Without moving parts, photovoltaic cells require little maintenance and are remarkably resilient. They do deteriorate over time, though, from moisture penetrating the casing and from sunlight itself degrading the high-purity silicon layers. The electricity generated by a solar panel declines by about 1 per cent every year so, after a few generations, all our hand-me-down solar panels will have degraded to the point of uselessness. Then what? New ones would be fiendishly difficult to create from scratch. Solar panels are made from thin slices of extremely pure silicon, and although the raw material is common sand, it must be processed and refined using complex and precise techniques – the same technological capabilities, more or less, that we need for modern semiconductor electronics components. These techniques took a long time to develop, and would presumably take a long time to recover. So photovoltaic solar power would not be within the capability of a society early in the industrialisation process. Perhaps, though, we were on the right track by starting with electrical power. Most of our renewable-energy technologies produce electricity. In our own historical development, it so happens that the core phenomena of electricity were discovered in the first half of the 1800s, well after the early development of steam engines. Heavy industry was already committed to combustion-based machinery, and electricity has largely assumed a subsidiary role in the organisation of our economies ever since. But could that sequence have run the other way? Is there some developmental requirement that thermal energy must come first? On the face of it, it’s not beyond the bounds of possibility that a progressing society could construct electrical generators and couple them to simple windmills and waterwheels, later progressing to wind turbines and hydroelectric dams. In a world without fossil fuels, one might envisage an electrified civilisation that largely bypasses combustion engines, building its transport infrastructure around electric trains and trams for long-distance and urban transport. I say ‘largely’. We couldn’t get round it all together. When it comes to generating the white heat demanded by modern industry, there are few good options but to burn stuff While the electric motor could perhaps replace the coal-burning steam engine for mechanical applications, society, as we’ve already seen, also relies upon thermal energy to drive the essential chemical and physical transformations it needs. How could an industrialising society produce crucial building materials such as iron and steel, brick, mortar, cement and glass without resorting to deposits of coal? You can of course create heat from electricity. We already use electric ovens and kilns. Modern arc furnaces are used for producing cast iron or recycling steel. The problem isn’t so much that electricity can’t be used to heat things, but that for meaningful industrial activity you’ve got to generate prodigious amounts of it, which is challenging using only renewable energy sources such as wind and water. An alternative is to generate high temperatures using solar power directly. Rather than relying on photovoltaic panels, concentrated solar thermal farms use giant mirrors to focus the sun’s rays onto a small spot. The heat concentrated in this way can be exploited to drive certain chemical or industrial processes, or else to raise steam and drive a generator. Even so, it is difficult (for example) to produce the very high temperatures inside an iron-smelting blast furnace using such a system. What’s more, it goes without saying that the effectiveness of concentrated solar power depends strongly on the local climate. No, when it comes to generating the white heat demanded by modern industry, there are few good options but to burn stuff. But that doesn’t mean the stuff we burn necessarily has to be fossil fuels. Let’s take a quick detour into the pre-history of modern industry. Long before the adoption of coal, charcoal was widely used for smelting metals. In many respects it is superior: charcoal burns hotter than coal and contains far fewer impurities. In fact, coal’s impurities were a major delaying factor on the Industrial Revolution. Released during combustion, they can taint the product being heated. During smelting, sulphur contaminants can soak into the molten iron, making the metal brittle and unsafe to use. It took a long time to work out how to treat coal to make it useful for many industrial applications. And, in the meantime, charcoal worked perfectly well. And then, well, we stopped using it. In retrospect, that’s a pity. When it comes from a sustainable source, charcoal burning is essentially carbon-neutral, because it doesn’t release any new carbon into the atmosphere – not that this would have been a consideration for the early industrialists. But charcoal-based industry didn’t die out altogether. In fact, it survived to flourish in Brazil. Because it has substantial iron deposits but few coalmines, Brazil is the largest charcoal producer in the world and the ninth biggest steel producer. We aren’t talking about a cottage industry here, and this makes Brazil a very encouraging example for our thought experiment. The trees used in Brazil’s charcoal industry are mainly fast-growing eucalyptus, cultivated specifically for the purpose. The traditional method for creating charcoal is to pile chopped staves of air-dried timber into a great dome-shaped mound and then cover it with turf or soil to restrict airflow as the wood smoulders. The Brazilian enterprise has scaled up this traditional craft to an industrial operation. Dried timber is stacked into squat, cylindrical kilns, built of brick or masonry and arranged in long lines so that they can be easily filled and unloaded in sequence. The largest sites can sport hundreds of such kilns. Once filled, their entrances are sealed and a fire is lit from the top. The skill in charcoal production is to allow just enough air into the interior of the kiln. There must be enough combustion heat to drive out moisture and volatiles and to pyrolyse the wood, but not so much that you are left with nothing but a pile of ashes. The kiln attendant monitors the state of the burn by carefully watching the smoke seeping out of the top, opening air holes or sealing with clay as necessary to regulate the process. Brazil shows how the raw materials of modern civilisation can be supplied without reliance on fossil fuels Good things come to those who wait, and this wood pyrolysis process can take up to a week of carefully controlled smouldering. The same basic method has been used for millennia. However, the ends to which the fuel is put are distinctly modern. Brazilian charcoal is trucked out of the forests to the country’s blast furnaces where it is used to transform ore into pig iron. This pig iron is the basic ingredient of modern mass-produced steel. The Brazilian product is exported to countries such as China and the US where it becomes cars and trucks, sinks, bathtubs, and kitchen appliances. Around two-thirds of Brazilian charcoal comes from sustainable plantations, and so this modern-day practice has been dubbed ‘green steel’. Sadly, the final third is supplied by the non-sustainable felling of primary forest. Even so, the Brazilian case does provide an example of how the raw materials of modern civilisation can be supplied without reliance on fossil fuels. Another, related option might be wood gasification. The use of wood to provide heat is as old as mankind, and yet simply burning timber only uses about a third of its energy. The rest is lost when gases and vapours released by the burning process blow away in the wind. Under the right conditions, even smoke is combustible. We don’t want to waste it. Better than simple burning, then, is to drive the thermal breakdown of the wood and collect the gases. You can see the basic principle at work for yourself just by lighting a match. The luminous flame isn’t actually touching the matchwood: it dances above, with a clear gap in between. The flame actually feeds on the hot gases given off as the wood breaks down in the heat, and the gases combust only once they mix with oxygen from the air. Matches are fascinating when you look at them closely. Wartime gasifier cars could achieve about 1.5 miles per kilogram. Today’s designs improve upon this To release these gases in a controlled way, bake some timber in a closed container. Oxygen is restricted so that the wood doesn’t simply catch fire. Its complex molecules decompose through a process known as pyrolysis, and then the hot carbonised lumps of charcoal at the bottom of the container react with the breakdown products to produce flammable gases such as hydrogen and carbon monoxide. The resultant ‘producer gas’ is a versatile fuel: it can be stored or piped for use in heating or street lights, and is also suitable for use in complex machinery such as the internal combustion engine. More than a million gasifier-powered cars across the world kept civilian transport running during the oil shortages of the Second World War. In occupied Denmark, 95 per cent of all tractors, trucks and fishing boats were powered by wood-gas generators. The energy content of about 3 kg of wood (depending on its dryness and density) is equivalent to a litre of petrol, and the fuel consumption of a gasifier-powered car is given in miles per kilogram of wood rather than miles per gallon. Wartime gasifier cars could achieve about 1.5 miles per kilogram. Today’s designs improve upon this. But you can do a lot more with wood gases than just keep your vehicle on the road. It turns out to be suitable for any of the manufacturing processes needing heat that we looked at before, such as kilns for lime, cement or bricks. Wood gas generator units could easily power agricultural or industrial equipment, or pumps. Sweden and Denmark are world leaders in their use of sustainable forests and agricultural waste for turning the steam turbines in power stations. And once the steam has been used in their ‘Combined Heat and Power’ (CHP) electricity plants, it is piped to the surrounding towns and industries to heat them, allowing such CHP stations to approach 90 per cent energy efficiency. Such plants suggest a marvellous vision of industry wholly weaned from its dependency on fossil fuel. Is that our solution, then? Could our rebooting society run on wood, supplemented with electricity from renewable sources? Maybe so, if the population was fairly small. But here’s the catch. These options all presuppose that our survivors are able to construct **efficient steam turbines,** CHP stations and internal combustion engines. We know how to do all that, of course – but in the event of a civilisational collapse, **who is to say that the knowledge won’t be lost?** And if it is, what are the chances that our descendants could reconstruct it? In our own history, the first successful application of steam engines was in pumping out coal mines. This was a setting in which fuel was already abundant, so it didn’t matter that the first, primitive designs were terribly inefficient. The increased output of coal from the mines was used to first smelt and then forge more iron. Iron components were used to construct further steam engines, which were in turn used to pump mines or drive the blast furnaces at iron foundries. And of course, steam engines were themselves employed at machine shops to construct yet more steam engines. It was only once steam engines were being built and operated that subsequent engineers were able to devise ways to increase their efficiency and shrink fuel demands. They found ways to reduce their size and weight, adapting them for applications in transport or factory machinery. In other words, there was a positive feedback loop at the very core of the industrial revolution: the production of coal, iron and steam engines were all mutually supportive. In a world without readily mined coal, would there ever be the opportunity to test profligate prototypes of steam engines, even if they could mature and become more efficient over time? How feasible is it that a society could attain a sufficient understanding of thermodynamics, metallurgy and mechanics to make the precisely interacting components of an internal combustion engine, without first cutting its teeth on much simpler external combustion engines – the separate boiler and cylinder-piston of steam engines? It took a lot of energy to develop our technologies to their present heights, and presumably it would take a lot of energy to do it again. Fossil fuels are out. That means our future society will need an awful lot of timber. An industrial revolution without coal would be, at a minimum, very difficult In a temperate climate such as the UK’s, an acre of broadleaf trees produces about four to five tonnes of biomass fuel every year. If you cultivated fast-growing kinds such as willow or miscanthus grass, you could quadruple that. The trick to maximising timber production is to employ coppicing – cultivating trees such as ash or willow that resprout from their own stump, becoming ready for harvest again in five to 15 years. This way you can ensure a sustained supply of timber and not face an energy crisis once you’ve deforested your surroundings. But here’s the thing: coppicing was already a well-developed technique in pre-industrial Britain. It couldn’t meet all of the energy requirements of the burgeoning society. The central problem is that woodland, even when it is well-managed, competes with other land uses, principally agriculture. The double-whammy of development is that, as a society’s population grows, it requires more farmland to provide enough food and also greater timber production for energy. The two needs compete for largely the same land areas. We know how this played out in our own past. From the mid-16th century, Britain responded to these factors by increasing the exploitation of its coal fields – essentially harvesting the energy of ancient forests beneath the ground without compromising its agricultural output. The same energy provided by one hectare of coppice for a year is provided by about five to 10 tonnes of coal, and it can be dug out of the ground an awful lot quicker than waiting for the woodland to regrow. It is this limitation in the supply of thermal energy that would pose the biggest problem to a society trying to industrialise without easy access to fossil fuels. This is true in our post-apocalyptic scenario, and it would be equally true in any counterfactual world that never developed fossil fuels for whatever reason. For a society to stand any chance of industrialising under such conditions, it would have to focus its efforts in certain, very favourable natural environments: not the coal-island of 18th-century Britain, but perhaps areas of Scandinavia or Canada that combine fast-flowing streams for hydroelectric power and large areas of forest that can be harvested sustainably for thermal energy. Even so, an industrial revolution without coal would be, at a minimum, very difficult. Today, use of fossil fuels is actually growing, which is worrying for a number of reasons too familiar to rehearse here. Steps towards a low-carbon economy are vital. But we should also recognise how pivotal those accumulated reservoirs of thermal energy were in getting us to where we are. Maybe we could have made it the hard way. A slow-burn progression through the stages of mechanisation, supported by a combination of renewable electricity and sustainably grown biomass, might be possible after all. Then again, it might not. We’d better hope we can secure the future of our own civilisation, because we might have scuppered the chances of any society to follow in our wake.