# NC

## 1

#### Interp: “Medicines” is a bare plural, thus the aff must not defend a subset of medicines.

Nebel 19 Nebel, Jake. [PhD candidate in philosophy at New York University, executive director at the Victory Briefs Institute for Debate, professor of philosophy at the University of Southern California]. “Existential Bare Plurals and Quantifier Scope.” Vbriefly. January 2, 2019. <https://www.vbriefly.com/2019/01/02/existential-bare-plurals-and-quantifier-scope-by-jake-nebel/?fbclid=IwAR3d1BVzSwoB1sq7PQR9dYE3_Ee-qAgD-phE2xJh6kAmrrgPOyabpO_Dxww> TG

Let’s start with [some](https://www.vbriefly.com/2014/12/19/jake-nebel-on-specifying-just-governments/) [background](https://www.vbriefly.com/2015/02/20/the-priority-of-resolutional-semantics-by-jake-nebel/). “Authoritarian regimes” is a [bare plural](http://www.glottopedia.org/index.php/Bare_plural): it’s a plural noun phrase without an explicit [determiner](http://www.glottopedia.org/index.php/Determiner) (e.g., “five,” “some,” “all,” “the,” “most”). Bare plurals are typically used to express [generic generalizations](https://plato.stanford.edu/entries/generics/), as in “Ravens are black.” Unlike [universally quantified statements](https://en.wikipedia.org/wiki/Universal_quantification), generics tolerate exceptions. For example, “Ravens are black” is true even though “All ravens are black” is false. In addition to generic readings, bare plurals can also sometimes have [existential](https://en.wikipedia.org/wiki/Existential_quantification) readings, as if they were preceded by “some.” For example, “Ravens are outside” is true just in case there are some ravens—i.e., more than one—outside. Unlike existential statements, generic generalizations are not entailed by specific instances. For example, the generic “Ravens are white” is false even though some ravens are indeed white; white ravens are white not because they are ravens but because they have leucism. For reasons I’ve given elsewhere, and which apply straightforwardly to this topic, I think “authoritarian regimes” is a generic bare plural, not an existential one. My reasons include (i) that it fails the [upward-entailment test](https://plato.stanford.edu/entries/generics/#IsolGeneInte) for existential bare plurals (the resolution doesn’t entail that the United States ought not provide military aid to governments, even though all authoritarian regimes are governments); (ii) that bare plurals [denote kinds](http://idiom.ucsd.edu/~ivano/SemBabble_old/LogicSeminar_15W/Material/Carlson_1977_EnglishBarePlurals.pdf) of things, not specific members of those kinds, and so get an existential reading only in very specific circumstances which don’t seem to obtain in this resolution; (iii) that generics are our default means of generalization, especially in [moral contexts](https://www.princeton.edu/leslie/Lerner_et_al-2013-Philosophical_Perspectives.pdf), so we should expect the resolution to be generic absent strong evidence to the contrary; and, most importantly, (iv) that we can simply tell that it’s generic by [linguistic intuition](https://academic.oup.com/bjps/article/61/1/123/1451363), which is the primary source of data for linguistic theorizing.

#### Violation: The plan text specs [malaria treatments]

#### Standards

#### 1] Limits and predictability—there are 20,000 new affs that means huge aff prep skew

FDA 9-2020"Fact Sheet: FDA at a Glance," U.S. Food and Drug Administration, https://www.fda.gov/about-fda/fda-basics/fact-sheet-fda-glance

FDA is responsible for the oversight of more than $2.8 trillion in consumption of food, medical products, and tobacco. FDA-regulated products account for about 20 cents of every dollar spent by U.S. consumers. FDA regulates about 78 percent of the U.S. food supply. This includes everything we eat except for meat, poultry, and some egg products. There are over 20,000 prescription drug products approved for marketing. FDA oversees over 6,500 different medical device product categories. There are over 1,600 FDA-approved animal drug products. There are about 300 FDA-licensed biologics products. FDA oversees over 90,000 tobacco products, not including e-liquids. The estimated number of regulated products is continually assessed for accuracy and reliability.

#### 2] Precision—anything other interp lets affs do away with random words in the res a] that means no solid neg ground b] The judge doesn’t have the jurisdiction to vote on affs that don’t affirm

#### Voters

#### Fairness first—debate is a game if its not fair people won’t play

#### DTD—a] debaters only listen to ballots it creates the best norms, and they ruined my ability to compete b] the argument is their case that means the debate can’t start

#### No RVI a] debaters will bait theory for RVI’s making LD more abusive b] you don’t get a cookie for being fair

#### Competing interps a] Reasonability is arbitrary and requires judge intervention b] competing interps is a race to the top for the best norms

#### T before theory a] I only get 2 months to set norms they get 4 years b] any NC abuse was a necessary check against 1AC abuse

## 2

#### The affs positioning to the healthcare institution as a place of healing ignores the specter of iatrogenic suffering, and prevents the improvement of the healthcare sector, the link alone turns case because the institution cannot improve itself

Alice Street, 12-12-2018, "Ghostly Ethics," Taylor & Francis, https://www.tandfonline.com/doi/full/10.1080/01459740.2018.1521400

Haunting as ethical critique The hospital ghosts that feature in this issue do not only make the past visible in the present. They also portend the affective and structural uncertainties inherent in how anthropology’s interlocutors engage with hospital infrastructures, and make sense of medical outcomes, in the future. These ghosts disrupt the very notion of the hospital as a site of life-sustaining care. The ghosts we meet in these pages are not external agents that force their way into the institution from outside; they are the progeny of hospital biomedicine. The hospital jinns described by Varley and Varma, for example, are “neither alien to nor separable from medicine, but inextricably bound up with its local practice and outcomes.” What these ghosts make visible, then, are the excesses, harm, and suffering that are integral to hospital medicine, but are commonly excluded from formal accounts (and the accounts that medical practitioners tell themselves) of Hippocratic biomedical ethics. It is apt that many of the articles explicitly attend to iatrogenic suffering. In the public hospital in Cameroon described by Chabrol, haunting takes a pathological form. Irresponsible and racist colonial medical campaigns resulted in widespread infection with viral hepatitis. The patients diagnosed in the hospital today often only find out they have the disease when they attend the blood bank to donate blood for relatives who have been admitted to the hospital with more acute conditions. Here, viral hepatitis appears as a “ghost” from a violent colonial past. But, importantly, Chabrol also employs the concept of haunting to question the ethics of diagnosing people with a disease in the present, for which there is little prospect of treatment, when knowledge of that diagnosis can itself disrupt kinship relationships and affect social and mental wellbeing in the future. In Gilgit Town in Pakistan-controlled Kashmir, sectarian violence frequently threatens to erupt inside the hospital and patients voice their concerns that the exclusions generated by everyday triaging and staff neglect follow sectarian lines. Here stories about jinn articulate the precariousness of hospital living in a setting where strangers cannot automatically be trusted to care. In both papers, jinns or ghost-diseases draw attention to the disjuncture of dominant narratives about biomedical ethics, which emphasize the life-sustaining capacities of medicine, and actual practices of biomedical care, which can be disruptive and damaging to social and biological life, in many hospital settings. The effect of bringing these different articles together under the figure of “haunting” is that iatrogenic suffering does not figure as a rare exception to biomedical norms, but is a constant “ghostly” presence that challenges the very notion of the hospital as a site of care. The Papua New Guinea example is a case in point. What, for example, would it mean to understand wori as an iatrogenic disease? In these tragic accounts of iatrogenic suffering, the trope of haunting – especially in fraught postcolonial settings or medical modes – serves as a means for anthropologists to introspectively engage with local understandings and criticisms of hospital medicine, and to scrutinize its intrinsic shortcomings and failures. Even when ghosts themselves do not appear in the articles, haunting is employed as a form of ethical critique. Krauss interprets women’s collective expressions of pain in Mexican abortion clinics as the forced embodiment of the moral paradoxes that lie at the heart of Mexican abortion law, which simultaneously criminalizes all abortion and grants exceptions from prosecution for morally acceptable cases. Krauss conjures pain as a ghost that haunts the law (and anthropological preoccupations with the law) with fundamental ethical questions about the ways in which the moral ambiguity of (Catholic) legal codes affect the wellbeing of women. Kehr employs the concept of “haunting” to describe physicians’ discomfort with the racialized medicine that they practice in the hospital and to capture their desire for a “medicine otherwise”, which might be understood as a desire to build a racially attuned hospital ethics. In Srinagar, the long-term mental health patients that are left behind in the hospital ward in the wake of a policy shift toward care in the community are described as jinn-like, “both their physical existence and the fact of their incarceration are disruptive to the social order, embodying the limited reach of current totalizing projects.” In her recent article on the hauntings of shipyards on the Hoogly River, India, Laura (Bear [2018](https://www.tandfonline.com/doi/full/10.1080/01459740.2018.1521400)) argues that the frequent appearances of ghosts – in the form of jinns – help workers to articulate the limitations and exclusions of a labor ethics premised on perpetual growth. Stories about jinns express an alternative ethics of labor, in which work leads to death and suffering as well as growth. In a workplace where horrific accidents and minor injuries alike are daily occurrences, ghosts “draw attention to the excluded element” of a capitalist ethics premised on productivity, growth and vitality – “individual suffering, decay and death” (Bear [2018](https://www.tandfonline.com/doi/full/10.1080/01459740.2018.1521400)). The ghosts of popular working class Hinduism “do not manifest a traumatic collective memory—an unacknowledged past does not emerge through their agency. Instead… they allow hidden individual suffering in the present to return as a collective tangible visceral experience” (Bear [2018](https://www.tandfonline.com/doi/full/10.1080/01459740.2018.1521400)). I suggest that ghosts fulfill a similar purpose in the hospital environment, giving voice to counter-narratives that challenge the medicine:disease oppositional dyad and making visible the ways in which hospital medicine, precisely because of its embeddedness in colonial institutional histories and social inequalities, may be generative of disease, death and suffering. Hospital futures Ghosts have fulfilled a dual analytic function in the articles that feature in this special issue. In one mode, often dubbed “hauntology” (following Derrida [1994](https://www.tandfonline.com/doi/full/10.1080/01459740.2018.1521400)), and influenced by psychoanalytic and postcolonial theory, they make affectively present the unextinguishable, deferred remnants of repressed violence and wrongdoing that took place in the past. The contributing articles show hauntology to be a singularly productive means of drawing attention to the “multidimensional and multiply temporal” nature of hospital space (Varley and Varma, this issue). In the second mode, which I term “ghostly ethics”, they reveal the excesses, limitations, and impossibilities of a biomedical ethics that is premised on care, trust, and medicine as a life-sustaining force, when it is embedded in hospital infrastructures. Ghostly ethics reveal the abusive relationships that shadow hospital care in places of sectarian conflict, the fruitless pursuit of diagnostic knowledge in places without therapeutic resources, the uncertainty and unpredictability that perpetually haunts medical claims to authority, and the moral ambiguities that saturate medical law. In all these instances, ghosts give voice to people’s experience of hospital medicine as the cause of suffering, uncertainty and death, as well as their amelioration. From the perspective of ghostly ethics, hospitals are haunted because hospital medicine is always shadowed by unresolved ethical questions about the good or harm that institutional care can do. In Papua New Guinea spirits frantically travel through hospital corridors because people die in the wrong place: institutional relationships between patients, doctors, nurses, and kin are experienced as prohibiting the production of healthy bodies. As ethical critique, haunting gives voice to concerns about the intrinsic failings of hospital medicine and generates conversation about what “medicine otherwise” (as Kehr puts it, this issue) might look like for the future.

#### Hauntology leads to the cancellation of future because of the nostalgia invoked by the aff, we reminisce the past as the future and repeat our atrocities, this turns the aff and is a solvency deficit, they can never solve root cause so long as they ignore the ghosts in the medical sector

Enis Yucekoralp 12-04-21 “Remembering the Future  Nostalgia, Hauntology, and the Spectres of the Internet” https://przekroj.pl/en/society/remembering-the-future-enis-yucekoralp

The melancholy of nostalgia When the term began to be applied to popular culture – most prominently in music by Simon Reynolds and Mark Fisher in 2005 – it was done so to denote a grouping of predominantly British electronic artists who could be labelled ‘hauntologists’, whose music could be described as ‘hauntological’. Fisher and Reynolds equated hauntology to notions of the fragile and involuntary qualities of memory and the melancholy of nostalgia. The irony is that the idea of hauntology itself has seemingly and erroneously become passé; a cultural phenomenon identified in the 2000s and then exorcised. However, before his untimely death in 2017, Mark Fisher continued to sophisticate his reworking of Derrida’s idea in his book Ghosts of My Life. There, in 2014, he suggested that media culture and life in the 21st century is distinguished by ‘anachronism and inertia’, but that this stasis has been concealed by the shallow transience and constant motion of the modern world. He argued that cultural motifs, such as rétrospectif montaging and nostalgia aesthetics, have become so commonplace that they are simply taken as a given. Borrowing a term, he called this the ‘slow cancellation of the future’. This notion “has been accompanied by a deflation of expectations,” Fisher writes. “The feeling of belatedness, of living after the gold rush, is as omnipresent as it is disavowed. Compare the fallow terrain of the current moment with the fecundity of previous periods and you will quickly be accused of ‘nostalgia’. But the reliance of current artists on styles that were established long ago suggests that the current moment is in the grip of a formal nostalgia.” The more things change, the more they stay the same. In Fisher’s sense of hauntology, there is a pervasive feeling that the modern world has lost its cultural and political momentum, that everything exists as some kind of inert relapse under ‘capitalist realism’. This idea – that the ideological persistence of capitalism renders it not just the only ‘viable’ politico-economic system on offer, but in such a way that a real alternative is seemingly unimaginable – is best understood through Frederic Jameson’s remark that “it’s easier to imagine an end to the world than an end to capitalism.” Every generation is nostalgic for the one that came before – either for those that they never lived through, or in the ghostly half-remembrance of childhood eras. Psychological research tells us that nostalgia is a common adaptive response to distress: we insulate ourselves with rose-tinted memories to endure whatever stresses, pain, or meaninglessness we face in the present. During the COVID-19 pandemic, for instance, there has been a stark and predictable rise in retrospective melancholia and delving into our personal digital archives. In April 2020, Spotify reported a 54% increase in its users creating nostalgia-themed playlists; Instagram challenges trended, too, such as last year’s #MeAt20, which encouraged users to share old photos from their pre-pandemic pasts. Familiarity is the cousin of comfort. But reminiscing about the past and invoking idealized versions of it has always been a safeguard against the uncertainty of the future and the incoherence of the present. This is perhaps nowhere more apparent than in the time-altering potential of the internet. A digital medium in every sense of the word; a séance in cyberspace. Digital reflections Though real progress seems dead to the world, technology has never had more velocity; perhaps we are simply going nowhere fast. The standard ideas of time and place have changed irrevocably thanks to new forms of era-defining digital communication. The internet compartmentalizes timings and spacing, weaving them through a system of cyclical returns which radically collapse the foundations of what we feel constitutes our Self and existence. That hauntology has now been attributed to the discourses of new media and technology is unsurprising considering the intangible spectrality of the internet as a medium of information. Of the new technological powers of the late 20th century, Derrida tells us that we cannot help but take into account “so many spectral effects, the new speed of apparition (we understand this word in its ghostly sense) of the simulacrum, the synthetic or prosthetic image, and the virtual event, cyberspace and surveillance, the control, appropriations, and speculations that today deploy unheard-of powers.” From 1993 to 2021, the epochal shift of the internet age and its revolutionizing technological accelerations have ushered in a rapid digital evolution. The world is faster and flatter than ever before. Smartphones and social media, for example, mediate our ability to be present in the current moment – at once temporizing our decisions and insisting that we act immediately. In these new forms of digital technology, it becomes possible to see the ghost in the machine. We live out online lives simultaneously and in parallel to our ‘real lives’, but in this immersive conjuring we are haunted by our own digital reflections. Yet it is also telling that hauntology was summoned into popular culture at the same time that the internet became the overriding system for cultural consumption and distribution. We may already be aware of deep-fake technology, but the emergence of another technological phenomenon – MyHeritage’s ‘Deep Nostalgia’ – brings with it the quite literal reanimation of the past. In essence, it allows users to upload old photos and have them move in ‘real-time’. Though it lacks the subtle mannerisms and gestures of loved ones, its AI-manipulation of images is the perfect instance of a digital drive for nostalgia and the uncanny effect it produces. Although technical modernity has deeply ruptured the difference between re-enactment and an experience in the present, we must remember that a pure nostalgia does not exist. It is merely a nostalgia-effect that is produced. The liquidity of the internet allows us to deconstruct contexts and traverse time with ease – the interconnectivity of digital networks means that the culture of different or personal and cultural eras is not only accessible, but endlessly malleable. The virtual world is like a ghostly time machine. Revisiting digital memories compresses the depth of history and brings the past both more proximate and more distant in the same gesture. Ascertaining where the past ends and the present starts is no longer straightforward. The past is either flaunted in kitsch citationality or furtively lurks under the surface of the new: endlessly available, endlessly repeatable. The internet is superabundant. Illimitably so. It is intangible, continually increasing, servers upon servers. But in the internet’s endless offering of re-watching, re-listening and re-visiting, “loss is itself lost”, as Fisher would put it. Technology preserves everything, ready to be exhumed at a whim, conjured up and cannibalized. With more than 70 million songs, Spotify, for instance, makes available almost the entire spectrum of the modern history of recorded music and reveals the phantomatic nature of internet time. Does anything really die anymore? Other digital streaming services such as Netflix reveal how patterns of media consumption mirror our desire for the past and retro culture: from 1980s sitcom re-runs to ‘classic movies’ in HD. Indeed, generations will always idealize previous pasts, and nostalgia as we understand it today is nearly always sentimental. The internet catalyses mourning and memorial through its contraction of time and place – the pace at which we can romanticize the ghosts of our past is quickened to hyper speed. The birth of the internet and the evolution of social media has conjured new spectres. The cultural ghosts of yesteryear Platforms such as TikTok, where many spectral moments live and die, are tailored to the attention spans and recollective consciousness of today’s teenagers. Because those born after the year 2000 have never lived in a world without the internet, the meteoric accelerationism of contemporary life and its digital platforms is normalized. Internet-mediated nostalgia is somewhat warped: its compression of time makes weeks feel like years. What is topical one month is passé by the next. Nostalgia has become an ever-more niche trend in the past few years. While the Baby Boomer generation may revive its cultural ghosts of 60s and 70s fashion and culture, Generation Z in 2021 has become nostalgic for 2014 and 2015, for Tumblr and Myspace Millennial chic. Perhaps a similar rising vogue for the 1990s is understandable for a set of teenagers curious about a world without the hyper-speed of internet; however, for neo-digital natives to make nostalgic Instagram memes about a time so proximate seems perhaps lavish. That pop sensation Dua Lipa, for instance, won a Grammy Award in March 2021 for an album inspired by musical memories and entitled Future Nostalgia is unsurprising in this regard. The ephemerality of contemporary culture is startling to generations raised on analogue longevity. Posthumously, it is nothing that Mark Fisher did not predict. The hauntological zeitgeist, of nostalgia for lost futures, has perhaps never been more uncanny in its haunting. At root, this nostalgia seems, as it has always been, to be about an idealized escape: backwards, and away from the alienation and numberless miseries of life in the modern world. But ghosts are not just retrospective, they (dis)appear on a spectrum: introspective, prospective, speculative and spectral. What is being mourned is not necessarily the fact that a certain future never happened, but that the ability to imagine other futures seems to be vanishing. In this way it becomes easier to see how a digital nostalgia for the past is actually nostalgia for the future, albeit the remnants of the future. As Derrida recalls elsewhere: “Modern technology […] increases tenfold the power of ghosts. The future belongs to ghosts.”

#### Embracing these specters is key to solve for nationalist and authoritarian violence – anything other method justifies erasing all traces that disturb the self-enclosure of the present and turns all impacts.

Papastephanou 11 – Associate Professor in the Department of Education at the University of Cyprus (Marianna, “Material Specters: International Conflicts, Disaster Management, and Educational Projects,” *Educational Theory*, Volume 61, Number 1, 2011, pgs. 113-114)//DD

It often appears that a prolonged conflict unsettles the present. Although this is psychologically true,44 politically it is mostly the other way round. According to Derrida, ‘‘every authoritarian regime wants to eternalize its present in order to rule out the possibility of its future disintegration and to erase the barbarity from which it sprang. Such regimes fear ghosts.’’45 Settlers — such as the Turkish settlers in the occupied part of Cyprus46 — have been used by their authorities as a means to an end (against Immanuel Kant’s Categorical Imperative, of course): to effect and consolidate demographic alterations that will erase the past relation of space and rightful (co)habitation. Settlement as a crime against humanity according to international law and settlement as arrangement of situations for purposes of realpolitik create a new, modern space that is disconnected from the past and hostile to a just future. The new ontology of space is haunted only by the memory of those who are in a position to know how the landscape once appeared. If the ‘‘present is unsettled no less by the return of the past than by the imminence of the future,’’47 then educational theory must defend a qualified preservation of memories and a preparation for the revival of unsettling futurity. ‘‘The founders of Israel spoke of making ‘facts on the ground.’ This term refers to shaping material reality in ways that institutionalize and make solid that which is, in fact, a recent innovation’’ (CD, 159). As facts on the ground, authoritarian strategies settle the present and block the advent of a desirable future perhaps far more than the emotional effects of any direct, personal loss (raising barriers to reconciliation) could ever do. ‘‘To reassure and perpetuate themselves, [authoritarian regimes] efface any spectral traces that threaten to disturb the self-enclosure of the present.’’48 As Saltman writes, ‘‘Israel eradicated Palestinian towns, removing all traces, all physical markers from which public memory of the history of the place could be conjured, invoked or referenced’’ (CD, 159). Such material production of faits accomplis creates ‘‘institutional and public memory while also working to conceal that which was there before. The longer it takes to rebuild schools and communities in New Orleans, the more powerful that wreckage becomes as new facts on the ground’’ (CD, 160). In turn, ‘‘the longer [created realities] become facts on the ground, the harder it becomes to remember what was there before’’ (CD, 160). This gives a new meaning to the Greek-Cypriot educational slogan ‘‘I do not forget and I struggle’’ that Zembylas unequivocally disparages as nationalism, pure and simple (PTE, 7). The educational demand for memory and for struggle to reclaim the rights that have been denied cannot be sweepingly dismissed without significant loss of commitment to international justice.

#### The alternative is to embrace the specter – only a critical interrogation of the present and the past as singular, totalizing, and complete can prevent the obstruction of possibility and their case cant solve since they look at time linearly—since their reps are messed up they cant interact correctly

Zembylas 13 – Associate Professor of Educational Theory and Curriculum Studies at the Open University of Cyprus (Michalinos, “Pedagogies of Hauntology In History Education: Learning to Live with the Ghosts of Disappeared Victims of War and Dictatorship,” DOI: 10.1111/edth.12010, February 2013)//DD

One way of addressing the past and its representations is through the concept of the specter. In Specters of Marx, a book that initiates the perceived ‘‘ethical turn’’ in his work, Derrida argued that any rethinking of the past and any possibility of a just future depends on whether we can ‘‘learn to live with ghosts’’ (SM, xviii), the specters of the past, particularly the ghosts of victims of atrocities. The spectral is what haunts and returns in a society because the ghosts have unfinished business, something that needs to be corrected. However, the resolution of this unfinished business is not to abolish the specters — for example, through (uncritical) spectacle pedagogies — because, as Derrida warned, this would amount to eliminating the possibility of a different future.32 In addressing the issue of spectrality, Derrida introduced the term hauntology — a near homophone of ‘‘ontology’’ in French — to interrogate and replace the priority of being and presence with the figure of the ghost. Unlike ontology, which is fixed to the present and to what is representable (the traditional Western ontological and epistemological position), hauntology draws attention to specters that are neither present nor absent, neither dead nor alive.33 Hauntology, then, occupies a peculiar ‘‘in-between’’ space that ‘‘reclaims the unspoken and neglected.’’34 For Derrida, specters are both ‘‘revenants’’ and ‘‘arrivants’’ (SM, xix), that is, spirits that come back and spirits that are to come, respectively; both of these temporal dimensions, as Ross Benjamin and Heesok Chang observe, are essential to spectrality.35 ‘‘Spectrality,’’ Fredric Jameson explains in his reaction to Derrida’s book, does not involve the conviction that ghosts exist or that the past (and maybe even the future they offer to prophesy) is still very much alive and at work, within the living present: all it says, if it can be thought to speak, is that the living present is scarcely as self-sufficient as it claims to be; that we would do well not to count on its destiny and solidity, which might under exceptional circumstances betray us.36 Spectrality denotes what is no longer or not yet living, which is not something present or absent, but something that is possibly everywhere, ‘‘bear[ing] traces of a lingering past and hover[ing] in suspense of an unforeseeable future.’’37 Being neither fully present nor fully absent, ghosts do not have an ontological status, but rather exceed all ontological oppositions between presence and absence, visible and invisible, living and dead.38 The concept of the spectral, then, has much to do with the concept of ‘‘trace’’ and thus time is always already spectral;39 in this sense, hauntology abolishes the concept of linear time as an ontological category of historical understanding. A society that has experienced disappearances — such as Argentina or Cyprus, for example — must come to terms with the specters of the disappeared, the traces left by them in the stories and images that are circulated, the societal habits of remembering and forgetting that are no longer noticed, and the public or private rituals that still take place to recognize the victims. The disappeared are ghosts whose stories and images reach from memory and absence; this is to say that ‘‘disappearance’’ as such — as a particular form of relationality between individuals within a society — reaches from a place and time that was and is no longer and records, recalls, and reinscribes remembrance in the aporetic of memory.40 A commonsense yet ideological response to the ghosts of the disappeared, as noted earlier, is a desire to remember and simultaneously a wish to ontologize the ghosts of the disappeared by categorizing them within what is representable — an action that aims at abolishing or reducing them to spectacles. Derrida argued, however, that a society can come to terms with specters without abolishing or reducing them to a spectacle, that is, to a kind of ontology. As he explained in a paragraph that concerns schools and educators in particular, The last one to whom a specter can appear, address itself, or pay attention is a spectator as such. At the theater or at school. The reasons for this are essential. As theoreticians or witnesses, spectators, observers, and intellectuals, scholars believe that looking is sufficient. Therefore, they are not always in the most competent position to do what is necessary: speak to the specter. (SM, 11) To come to terms with the specters of the past, there needs to be an engagement with the past that is not reduced to its totalizing representation and that does not fall into the delusion of a timeless understanding that is ever present. Derrida called on us to speak and listen to the specter not because the specter will reveal some kind of a secret; rather, speaking with and listening to the specter may open us to the experience of unknowing that underlies a productive engagement and a turning away from that which is supposedly determined content to be uncovered by representational practices.41 The ghost of the disappeared, then, pushes at the boundaries of language, thought, and emotion to open new possibilities for the future, possibilities that do not reduce the ghost’s ethical injunction to an object of knowledge.42 The specter signifies, therefore, a critical interrogation of the present and the past as singular, totalizing, and complete; the specter reminds us that the past is incomplete because there are always elusive remnants that cannot be articulated in the languages available to us. This is why it is suggested, for example, that commemorative or justice projects that rely too heavily on epistemological accounts or seek merely redemption become too totalizing to be open to the view that specters can be anything other than obscure forms of representation. Finally, it is important to point out how Derrida linked the specter to the theme of justice and advocated a politics of memory and responsibility that is directed not only to the living, but also to the dead and to the not yet born: No justice ... seems possible or thinkable without the principle of some responsibility, beyond all living present, within that which disjoins the living present, before the ghosts of those who are not yet born or who are already dead, be they victims of wars, political or other kinds of violence, nationalist, racist, colonialist, sexist, or other kinds of exterminations, victims of the oppressions of capitalist imperialism or any of the forms of totalitarianism. (SM, xix) Derrida chose, as noted earlier, to speak about ghosts in the name of justice because, he observed, ‘‘one cannot speak directly about justice, thematize or objectivize justice, say ‘this is just’ and even less ‘I am just,’ without immediately betraying justice.’’43 Since justice entails ‘‘an experience of the impossible’’ and thus is aporetic — because it is implicated with law, although it cannot be reduced to it44 — spectrality becomes valuable in determining how to address justice demands. It is in this spectral sense that justice is the ‘‘experience of absolute alterity,’’45 an openness toward a radical otherness, to ‘‘the coming of the other, the absolute and unpredictable singularity of the arrivant as justice’’ (SM, 28). The specter’s ethical injunction is that we remain open to the radical otherness of the arrivant as arrivant, what remains to come — for example, a ‘‘democracy to come,’’ ‘‘hospitality without reserve,’’ and ‘‘alterity that cannot be anticipated’’ (SM, 65–66). As Derrida pointed out, ‘‘without this experience of the impossible, one might as well give up on both justice and the event’’ (SM, 65) — that is, the event to come. The responsibility of the haunted is this, then: to be open to justice as unrepresentable, as always to come, as a trace of directionality rather than as a fixed destination.46 Hence justice for disappeared victims, for example, is not a calculable and distributive justice that ends with trials and punishments but an agonistic justice that contests legalistic settlements. In this sense, justice is a critical force that helps to articulate an alternative vision that is motivated by the infinite obligation to the other — in this case, the ghost of a disappeared victim who cannot be assessed by a finite set of qualities, representations, or legal arguments.

#### Don’t weigh case

#### a] Fiat is illusory—nothing happens when you vote for the plan, rejecting their reps is k2 decreasing linear views of history

#### b] Reps first

#### Reps are a pre-requisite to policy actions

Doty, 1996 (Roxanne Lynn Doty, Assistant Professor of Political Science at Arizona State University, “Imperial Encounters” 5-6)

This study begins with the premise that representation is an inherent and important aspect of global political life and therefore a critical and legitimate area of inquiry. International relations are inextricably bound up with discursive practices-that put into circulation representations that are taken as "truth." The goal-of-analyzing these practices is not to reveal essential truths that have been obscured, but rather to examine bow certain representations underlie the production of knowledge and, identities and how these representations make various courses of action possible. AS Said (1979: 21) notes, Mere is no such thing as a delivered presence, but there is a re-presence, or representation. Such an assertion does not deny the existence of the material world, but rather suggests that material objects and subjects are constituted as such within discourse. SO, for example, when U.S. troops march into Grenada, this is certainly "real: though the march of troops across a piece of geographic space is in itself singularly uninteresting and socially irrelevant outside of the representations that produce meaning. It is only when "American" is attached to the troops and "Grenada” to the geographic space that meaning is created. What the physical behavior itself is, though, is still far from certain until discursive practices constitute it as an "invasion; a 'show of force," "training exercise, “a "rescue, “and SO on. What is "really" going on in such a situation is inextricably linked to the discourse within which it is located. To attempt a neat separation between discursive and nondiscursive practices, understanding the former as purely linguistic, assumes a series of Dichotomies – thought/reality appearance essence, mind matter, word/world, subjective/objective - that a critical genealogy calls into Question. Against this, the perspective taken here affirms the material and performative character of discourse. 'In suggesting that global politics, and specifically the aspect that has to do with relations between the North and the South, is linked to representational practices 1 am suggesting that the issues and concerns that constitute these relations occur within a 'reality' whose content has for the most part been defined by the representational practices of the ‘first world'. Focusing on discursive practices enables one to examine how the processes that produce "truth" and "knowledge" work and how they are articulated with the exercise of political, military, and economic power.

#### c] Hauntology is key to break down hegemonic knowledge production by focusing on inventing the future rather than fixing the past.

Zembylas 13 – Associate Professor of Educational Theory and Curriculum Studies at the Open University of Cyprus (Michalinos, “Pedagogies of Hauntology In History Education: Learning to Live with the Ghosts of Disappeared Victims of War and Dictatorship,” DOI: 10.1111/edth.12010, February 2013)//DD

The purpose of this essay is to examine the possibilities for history education reconceived in terms of Derrida’s notion of hauntology (SM, 10), that is, as an ongoing conversation with the ghosts of disappeared victims of war and dictatorship through pedagogies that invent the future rather than fixing the past. Hauntology is used in this essay as both metaphor and pedagogical methodology for deconstructing the orthodoxies of academic history thinking and learning. As metaphor, hauntology evokes the figure of the ghost to trouble the hegemonic status of representational modes of knowledge in remembrance practices and to undermine their ontological frames and ideological histories. As pedagogical methodology, hauntology reframes histories of loss and absence and uses them as points of departure to acknowledge the complexities and contradictions that emerge from haunting. In other words, I invoke what Sande Cohen has coined as ‘‘historiospectography’’ — to describe Derrida’s advocacy of the unlimited ‘‘being-with specters’’ — and highlight the openings for renewed pedagogical engagements with notions of memory, justice, and (re)conciliation in history education.

# Case

#### The tiniest chance of universe destruction outweighs certain human extinction—we are cosmically insignificant

Dr. Nick Hughes 18, Postdoctoral Research Fellow at University College Dublin, PhD in Philosophy from University of St Andrews & University of Olso, and Dr. Guy Kahane, Professor of Philosophy at the University of Oxford, D. Phil. in Philosophy from Oxford University, “Our Cosmic Insignificance”, 7-6, <http://www.unariunwisdom.com/our-cosmic-insignificance/>

Humanity occupies a very small place in an unfathomably vast Universe. Travelling at the speed of light – 671 million miles per hour – it would take us 100,000 years to cross the Milky Way. But we still wouldn’t have gone very far. Our modest Milky Way galaxy contains 100–400 billion stars. This isn’t very much: according to the latest calculations, the observable universe contains around 300 sextillion stars. By recent estimates, our Milky Way galaxy is just one of 2 trillion galaxies in the observable Universe, and the region of space that they occupy spans at least 90 billion light-years. If you imagine Earth shrunk down to the size of a single grain of sand, and you imagine the size of that grain of sand relative to the entirety of the Sahara Desert, you are still nowhere near to comprehending how infinitesimally small a position we occupy in space. The American astronomer Carl Sagan put the point vividly in 1994 when discussing the famous ‘Pale Blue Dot’ photograph taken by Voyager 1. Our planet, he said, is nothing more than ‘a mote of dust suspended in a sunbeam’. Stephen Hawking delivers the news more bluntly. We are, he says, “just a chemical scum on a moderate-sized planet, orbiting round a very average star in the outer suburb of one among a hundred billion galaxies.” And that’s just the spatial dimension. The observable Universe has existed for around 13.8 billion years. If we shrink that span of time down to a single year, with the Big Bang occurring at midnight on 1 January, the first Homo sapiens made an appearance at 22:24 on 31 December. It’s now 23:59:59, as it has been for the past 438 years, and at the rate we’re going it’s entirely possible that we’ll be gone before midnight strikes again. The Universe, on the other hand, might well continue existing forever, for all we know. Sagan could have added, then, that our time on this mote of dust will amount to nothing more than a blip. In the grand scheme of things we are very, very small. For Sagan, the Pale Blue Dot underscores our responsibility to treat one another with kindness and compassion. But reflection on the vastness of the Universe and our physical and temporal smallness within it often takes on an altogether darker hue. If the Universe is so large, and we are so small and so fleeting, doesn’t it follow that we are utterly insignificant and inconsequential? This thought can be a spur to nihilism. If we are so insignificant, if our existence is so trivial, how could anything we do or are – our successes and failures, our anxiety and sadness and joy, all our busy ambition and toil and endeavour, all that makes up the material of our lives – how could any of that possibly matter? To think of one’s place in the cosmos, as the American philosopher Susan Wolf puts it in ‘The Meanings of Lives’ (2007), is ‘to recognise the possibility of a perspective … from which one’s life is merely gratuitous’. The sense that we are somehow insignificant seems to be widely felt. The American author John Updike expressed it in 1985 when he wrote of modern science that: We shrink from what it has to tell us of our perilous and insignificant place in the cosmos … our century’s revelations of unthinkable largeness and unimaginable smallness,

of abysmal stretches of geological time when we were nothing, of supernumerary galaxies … of a kind of mad mathematical violence at the heart of the matter have scorched us deeper than we know. In a similar vein, the French philosopher Blaise Pascal wrote in *Pensées* (1669): When I consider the short duration of my life, swallowed up in an eternity before and after, the little space I fill engulfed in the infinite immensity of spaces whereof I know nothing, and which know nothing of me, I am terrified. The eternal silence of these infinite spaces frightens me. Commenting on this passage in *Between Man and Man* (1947), the Austrian-Israeli philosopher Martin Buber said that Pascal had experienced the ‘uncanniness of the heavens’, and thereby came to know ‘man’s limitation, his inadequacy, the casualness of his existence’. In the film *Monty Python’s* *The Meaning of Life* (1983), John Cleese and Eric Idle conspire to persuade a character, played by Terry Gilliam, to give up her liver for donation. Understandably reluctant, she is eventually won over by a song that sharply details just how comically inconsequential she is in the cosmic frame. Even the relatively upbeat Sagan wasn’t, in fact, immune to the pessimistic point of view. As well as viewing it as a lesson in the need for collective goodwill, he also argued that the Pale Blue Dot challenges ‘our posturings, our imagined self-importance, and the delusion that we have some privileged position in the Universe’. When we reflect on the vastness of the universe, our humdrum cosmic location, and the inevitable future demise of humanity, our lives can seem utterly insignificant. As we complacently go about our little Earthly affairs, we barely notice the black backdrop of the night sky. Even when we do, we usually see the starry skies as no more than a pleasant twinkling decoration. This sense of cosmic insignificance is not uncommon; one of Joseph Conrad’s characters describes one of those dewy, clear, starry nights, oppressing our spirit, crushing our pride, by the brilliant evidence of the awful loneliness, of the hopeless obscure insignificance of our globe lost in the splendid revelation of a glittering, soulless universe. I hate such skies. The young Bertrand Russell, a close friend of Conrad, bitterly referred to the Earth as “the petty planet on which our bodies impotently craw.” Russell wrote that: Brief and powerless is Man’s life; on him and all his race the slow, sure doom falls pitiless and dark. Blind to good and evil, reckless of destruction, omnipotent matter rolls on its relentless way…This is why Russell thought that, in the absence of God, we must build our lives on “a foundation of unyielding despair.” When we consider ourselves as a mere dot in a vast universe, when we consider ourselves in light of everything there is, nothing human seems to matter. Even the worst human tragedy may seem to deserve no cosmic concern. After all, we are fighting for attention with an incredibly vast totality. How could this tiny speck of dust deserve even a fraction of attention, from that universal point of view? This is the image that is evoked when, for example, Simon Blackburn writes that “to a witness with the whole of space and time in its view, nothing on the human scale will have meaning”. Such quotations could be easily multiplied—we find similar remarks, for example, in John Donne, Voltaire, Schopenhauer, Byron, Tolstoy, Chesterton, Camus, and, in recent philosophy, in Thomas Nagel, Harry Frankfurt, and Ronald Dworkin. The bigger the picture we survey, the smaller the part of any point within it, and the less attention it can get… When we try to imagine a viewpoint encompassing the entire universe, humanity and its concerns seem to get completely swallowed up in the void. Over the centuries, many have thought it absurd to think that we are the only ones. For example, Anaxagoras, Epicurus, Lucretius, and, later, Giordano Bruno, Huygens and Kepler were all confident that the universe is teeming with life. Kant was willing to bet everything he had on the existence of intelligent life on other planets. And we now know that there is a vast multitude of Earth-like planets even in our own little galaxy. The experience of cosmic insignificance is often blamed on the rise of modern science, and the decline of religious belief. Many think that things started to take a turn for the worse with Copernicus. Nietzsche, for example, laments ‘the nihilistic consequences of contemporary science’, and adds that Since Copernicus it seems that man has found himself on a descending slope—he always rolls further and further away from his point of departure toward… —where is that? Towards nothingness? Freud later wrote about a series of harsh blows to our self-esteem delivered by science. The first blow was delivered by Copernicus, when we learned, as Freud puts it, that “our earth was not the centre of the universe but only a tiny fragment of a cosmic system of scarcely imaginable vastness…” It is still common to refer, in a disappointed tone, to the discovery that we aren’t at the centre of God’s creation, as we had long thought, but located, as Carl Sagan puts it, “in some forgotten corner”. We live, Sagan writes, “on a mote of dust circling a humdrum star in the remotest corner of an obscure galaxy.”

#### Tropical islands survive nuclear winter scenarios

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 and even oxygen and food sources

#### Post nuke war industrialization is impossible

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.

### Biod loss

#### Move to geoengineering now kills biodiversity – makes it impossible for species to adapt.

Stephen Fleischfresser 18. a lecturer at the University of Melbourne's Trinity College and holds a PhD in the History and Philosophy of Science. "Geoengineering could cause more harm than climate change," Cosmos Magazine, <https://cosmosmagazine.com/technology/neering-could-cause-more-harm-than-climate-change> //reem

New research published in Nature Ecology & Evolution has come to the counterintuitive conclusion that attempts to fight climate change using technological remedies may well inflict greater damage to global biodiversity than global warming itself. As anybody who has been watching recent American politics will know, political decision-making is often bewilderingly inconsistent, and this is true of all governments over a longer time scale. What seems like a good idea one day may become politically toxic the next, which means that the futures of all long-term projects are far from assured. They can be started or stopped rapidly or gradually, depending on political whim. This could seriously affect international, large-scale, long-term projects to manipulate the Earth's natural system to fight global warming, a process called "geoengineering". Geoengineering comes in two basic forms. The first attempts to remove human-made greenhouse gases, such as carbon dioxide, from the atmosphere and safely dispose of or store them out of harm's way. The second is "solar radiation management", which attempts to regulate the amount of the sun's energy reaching the surface. The most likely method of implementing this second form of geoengineering, called stratospheric aerosol injection (SAI), involves the release of aerosols, mixtures of fine particles or liquids, in the very upper atmosphere in an attempt to reflect some of the sun's rays and thus help cool the planet. A team of researchers led by Christopher Trisos of the National Socio-Environmental Synthesis Centre at the University of Maryland, US, has now modelled the effects of abrupt changes in potential long-term SAI geoengineering projects. The scientists imagine a scenario in which SAI projects continue to 2070 and then are quickly halted due, most likely, to mercurial politics. Using a geoengineering climate model simulation called the Geoengineering Model Intercomparison Project, or GeoMIP, they found that such a quick change would reduce global biodiversity more than global warming itself would. The reason for this is to do with the rate of climate change. "As climate changes, the appropriate conditions necessary for the persistence of a species move across the Earth, driving species' geographic range movements in response to climate change," write the authors. "Indeed, species that fail to track moving climates may go extinct, despite suitable climate conditions being present elsewhere." As long as climate change is gradual enough, then, species will have a chance to adapt. The measure of the rate at which species-appropriate conditions move across the planet is dubbed "climate velocity". The GeoMIP model has predicted that these velocities are much higher in anthropogenic SAI projects than those projected for global warming, which means that species have much less time to adapt and will face higher rates of extinction because of it. Interestingly, the team found that the effect of rapidly ending a long-term SAI project would be more calamitous than starting one, as climate velocities "at termination are most extreme in tropical oceans, the biodiversity-rich Amazon Basin, Africa, Eurasia and polar region". Thus, while technology may have landed us in this predicament, it may not be able to get us out of it with biodiversity intact.

#### Loss of biodiversity causes extinction.

Rajendra Madhavrao Shende 13. an alumnus of Indian Institute of Technology (IIT) and former Director in United Nations Environment Programme (UNEP), is currently serving as the Chairman of TERRE Policy Centre which is a not-for-profit organization engaged in the evidence-based policy development and project based advocacy on the sustainable development, “Importance of Biodiversity Why should we care?”; October, 2013; NEWSLETERRE, Volume 11, Issue 1 //reem

Biodiversity or biological diversity is the variety or richness of ecosystems, species composition therein, and their genetic diversity too. Professor Edward O. Wilson, Harvard visionary of biodiversity, observes that the current rate of biodiversity loss is perhaps the highest since the loss of dinosaurs about 65 million years ago during the Mesozoic era, when humans had not appeared. He regrets that if such indiscriminate annihilation of all biodiversity from the face of the earth happens for anthropogenic reasons, as has been seen now, it is sure to force humanity into an emotional shock and trauma of loneliness and helplessness on this planet. He believes that the current wave of biodiversity loss is sure to lead us into an age that may be appropriately called the “Eremozoic Era, the Age of Loneliness.” Loss of biodiversity is a much greater threat to human survival than even climate change. Both could act, synergistically too, to escalate human extinction faster. Biodiversity is so indispensable for human survival that the United Nations General Assembly has designated the decade 2011-2020 as the 'Biodiversity Decade' with the chief objective of enabling humans to live peaceably or harmoniously with nature and its biodiversity. We should be happy that during October 1-19, 2012, XI Conference of Parties (CoP-11), a global mega event on biodiversity, is taking place in Hyderabad, when PAGE 2 Beware the loss of biodiversity - Prof. Sanjeevan Raj delegates from 193 party countries are expected to meet. They will review the Convention on Biological Diversity (CBD), which was originally introduced at the Earth Summit or the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. The Ministry of Environment and Forests (MoEF) is the nodal agency for CoP-11. Today, India is one of the 17 mega-diverse (richest biodiversity) countries. Biodiversity provides all basic needs for our healthy survival oxygen, food, medicines, fibre, fuel, energy, fertilizers, fodder and waste-disposal, etc. Fast vanishing honeybees, dragonflies, bats, frogs, house e sparrows, filter (suspension)-feeder oysters and all keystone species are causing great economic loss as well as posing an imminent threat to human peace and survival. The three-fold biodiversity mission before us is to inventorise the existing biodiversity, conserve it, and, above all, equitably share the sustainable benefits out of it.

### Isomer bombs

#### Gamma-ray weapons drop deterrence and create explosions 60 times greater—if nuke war is close to extinction there is no doubt that isomer bombs cause extinction

David **Hambling**, 8-1-20**03**, "Gamma-ray weapons could trigger next arms race," New Scientist, https://www.newscientist.com/article/dn4049-gamma-ray-weapons-could-trigger-next-arms-race/

An exotic kind of nuclear explosive being developed by the US Department of Defense could blur the critical distinction between conventional and nuclear weapons. The work has also raised fears that weapons based on this technology could trigger the next arms race. The explosive works by stimulating the release of energy from the nuclei of certain elements but does not involve nuclear fission or fusion. The energy, emitted as gamma radiation, is thousands of times greater than that from conventional chemical explosives. The technology has already been included in the Department of Defense’s Militarily Critical Technologies List, which says: “Such extraordinary energy density has the potential to revolutionise all aspects of warfare.” Scientists have known for many years that the nuclei of some elements, such as hafnium, can exist in a high-energy state, or nuclear isomer, that slowly decays to a low-energy state by emitting gamma rays. For example, hafnium-178m2, the excited, isomeric form of hafnium-178, has a half-life of 31 years. The possibility that this process could be explosive was discovered when Carl Collins and colleagues at the University of Texas at Dallas demonstrated that they could artificially trigger the decay of the hafnium isomer by bombarding it with low-energy X-rays (New Scientist print edition, 3 July 1999). The experiment released 60 times as much energy as was put in, and in theory a much greater energy release could be achieved. Energy pump Before hafnium can be used as an explosive, energy has to be “pumped” into its nuclei. Just as the electrons in atoms can be excited when the atom absorbs a photon, hafnium nuclei can become excited by absorbing high-energy photons. The nuclei later return to their lowest energy states by emitting a gamma-ray photon. Nuclear isomers were originally seen as a means of storing energy, but the possibility that the decay could be accelerated fired the interest of the Department of Defense, which is also investigating several other candidate materials such as thorium and niobium. For the moment, the production method involves bombarding tantalum with protons, causing it to decay into hafnium-178m2. This requires a nuclear reactor or a particle accelerator, and only tiny amounts can be made. Currently, the Air Force Research Laboratory at Kirtland, New Mexico, which is studying the phenomenon, gets its hafnium-178m2 from SRS Technologies, a research and development company in Huntsville, Alabama, which refines the hafnium from nuclear material left over from other experiments. The company is under contract to produce experimental sources of hafnium-178m2, but only in amounts less than one ten-thousandth of a gram. Extremely powerful But in future there may be cheaper ways to create the hafnium isomer – by bombarding ordinary hafnium with high-energy photons, for example. Hill Roberts, chief scientist at SRS, believes that technology to produce gram quantities will exist within five years. The price is likely to be high – similar to enriched uranium, which costs thousands of dollars per kilogram – but unlike uranium it can be used in any quantity, as it does not require a critical mass to maintain the nuclear reaction. The hafnium explosive could be extremely powerful. One gram of fully charged hafnium isomer could store more energy than 50 kilograms of TNT. Miniature missiles could be made with warheads that are far more powerful than existing conventional weapons, giving massively enhanced firepower to the armed forces using them. The effect of a nuclear-isomer explosion would be to release high-energy gamma rays capable of killing any living thing in the immediate area. It would cause little fallout compared to a fission explosion, but any undetonated isomer would be dispersed as small radioactive particles, making it a somewhat “dirty” bomb. This material could cause long-term health problems for anybody who breathed it in. Political fallout There would also be political fallout. In the 1950s, the US backed away from developing nuclear mini-weapons such as the “Davy Crockett” nuclear bazooka that delivered an explosive punch of 18 tonnes of TNT. These weapons blurred the divide between the explosive power of nuclear and conventional weapons, and the government feared that military commanders would be more likely to use nuclear weapons that had a similar effect on the battlefield to conventional weapons. By ensuring that the explosive power of a nuclear weapon was always far greater, it hoped that they could only be used in exceptional circumstance when a dramatic escalation of force was deemed necessary. Then in 1994, the US confirmed this policy with the Spratt-Furse law, which prevents US military from developing mini-nukes of less than five kilotons. But the development of a new weapon that spans the gap between the explosive power of nuclear and conventional weapons would remove this restraint,

giving commanders a way of increasing the amount of force they can use in a series of small steps. Nuclear-isomer weapons could be a major advantage to armies possessing them, leading to the possibility of an arms race. André Gsponer, director of the Independent Scientific Research Institute in Geneva, believes that a nation without such weapons would not be able to fight one that possesses them. As a result, he says, “many countries which will not have access to these weapons will produce nuclear weapons as a deterrent”, leading to a new cycle of proliferation. The Department of Defense notes that there are serious technical issues to be overcome and that useful applications may be decades away. But its Militarily Critical Technologies List also says: “We should remember that less than six years intervened between the first scientific publication characterising the phenomenon of fission and the first use of a nuclear weapon in 1945.”