### 1

#### Interpretation: “medicines” is a generic bare plural. The aff may not defend that member nations of the World Trade Organization ought to reduce intellectual property protections for a medicine or subset of medicines.

Nebel 19. [Jake Nebel is an assistant professor of philosophy at the University of Southern California and executive director of Victory Briefs. He writes a lot of this stuff lol – duh.] “Genericity on the Standardized Tests Resolution.” Vbriefly. August 12, 2019. <https://www.vbriefly.com/2019/08/12/genericity-on-the-standardized-tests-resolution/?fbclid=IwAR0hUkKdDzHWrNeqEVI7m59pwsnmqLl490n4uRLQTe7bWmWDO_avWCNzi14> TG

Both distinctions are important. Generic resolutions can’t be affirmed by specifying particular instances. But, since generics tolerate exceptions, plan-inclusive counterplans (PICs) do not negate generic resolutions.

Bare plurals are typically used to express generic generalizations. But there are two important things to keep in mind. First, generic generalizations are also often expressed via other means (e.g., definite singulars, indefinite singulars, and bare singulars). Second, and more importantly for present purposes, bare plurals can also be used to express existential generalizations. For example, “Birds are singing outside my window” is true just in case there are some birds singing outside my window; it doesn’t require birds in general to be singing outside my window.

So, what about “colleges and universities,” “standardized tests,” and “undergraduate admissions decisions”? Are they generic or existential bare plurals? On other topics I have taken great pains to point out that their bare plurals are generic—because, well, they are. On this topic, though, I think the answer is a bit more nuanced. Let’s see why.

“Colleges and universities” is a generic bare plural. I don’t think this claim should require any argument, when you think about it, but here are a few reasons.

First, ask yourself, honestly, whether the following speech sounds good to you: “Eight colleges and universities—namely, those in the Ivy League—ought not consider standardized tests in undergraduate admissions decisions. Maybe other colleges and universities ought to consider them, but not the Ivies. Therefore, in the United States, colleges and universities ought not consider standardized tests in undergraduate admissions decisions.” That is obviously not a valid argument: the conclusion does not follow. Anyone who sincerely believes that it is valid argument is, to be charitable, deeply confused. But the inference above would be good if “colleges and universities” in the resolution were existential. By way of contrast: “Eight birds are singing outside my window. Maybe lots of birds aren’t singing outside my window, but eight birds are. Therefore, birds are singing outside my window.” Since the bare plural “birds” in the conclusion gets an existential reading, the conclusion follows from the premise that eight birds are singing outside my window: “eight” entails “some.” If the resolution were existential with respect to “colleges and universities,” then the Ivy League argument above would be a valid inference. Since it’s not a valid inference, “colleges and universities” must be a generic bare plural.

Second, “colleges and universities” fails the [upward-entailment test](https://plato.stanford.edu/entries/generics/#IsolGeneInte) for existential uses of bare plurals. Consider the sentence, “Lima beans are on my plate.” This sentence expresses an existential statement that is true just in case there are some lima beans on my plate. One test of this is that it entails the more general sentence, “Beans are on my plate.” Now consider the sentence, “Colleges and universities ought not consider the SAT.” (To isolate “colleges and universities,” I’ve eliminated the other bare plurals in the resolution; it cannot plausibly be generic in the isolated case but existential in the resolution.) This sentence does not entail the more general statement that educational institutions ought not consider the SAT. This shows that “colleges and universities” is generic, because it fails the upward-entailment test for existential bare plurals.

Third, “colleges and universities” fails the adverb of quantification test for existential bare plurals. Consider the sentence, “Dogs are barking outside my window.” This sentence expresses an existential statement that is true just in case there are some dogs barking outside my window. One test of this appeals to the drastic change of meaning caused by inserting any adverb of quantification (e.g., always, sometimes, generally, often, seldom, never, ever). You cannot add any such adverb into the sentence without drastically changing its meaning. To apply this test to the resolution, let’s again isolate the bare plural subject: “Colleges and universities ought not consider the SAT.” Adding generally (“Colleges and universitiesz generally ought not consider the SAT”) or ever (“Colleges and universities ought not ever consider the SAT”) result in comparatively minor changes of meaning. (Note that this test doesn’t require there to be no change of meaning and doesn’t have to work for every adverb of quantification.) This strongly suggests what we already know: that “colleges and universities” is generic rather than existential in the resolution.

#### Violation: They spec COVID medicines

#### Standards:

#### [1] precision – the counter-interp justifies them arbitrarily doing away with random words in the resolution which decks negative ground and preparation because the aff is no longer bounded by the resolution. Independent voter for jurisdiction – the judge doesn’t have the jurisdiction to vote aff if there wasn’t a legitimate aff.

#### [2] Limits and ground – their model allows affs to defend anything from Covid vaccines to HIV drugs to Insulin— there's no universal DA since each has different functions and political implications — that explodes neg prep and leads to random medicine of the week affs which makes cutting stable neg links impossible incentivsing more cheaty process pics due to lack of ground — limits key to reciprocal engagement since they create a caselist for neg prep and it takes out ground like DAs to certain medicines which are some of the few neg generics when affs spec medicines.

#### [3] TVA solves – you could’ve read your plan as an advantage under a whole res advocacy.

#### Fairness – debate is a competitive activity that requires fairness for objective evaluation. Outweighs because it’s the only intrinsic part of debate – all other rules can be debated over but rely on some conception of fairness to be justified.

#### Drop the debater – a] deter future abuse and b] set better norms for debate.

#### Competing interps – [a] reasonability is arbitrary and encourages judge intervention since there’s no clear norm, [b] it creates a race to the top where we create the best possible norms for debate.

#### No RVIs – a] illogical, you don’t win for proving that you meet the burden of being fair, logic outweighs since it’s a prerequisite for evaluating any other argument, b] RVIs incentivize baiting theory and prepping it out which leads to maximally abusive practices

### 2

#### Desire from lack projects identity which we can never fully reach which urges the political to determine which identities are legitimate. Thus, the role of the ballot is to vote for the debater with the best method of traversing the fantasy.

**Edelman 1** (Lee Edelman, No Future: Queer Theory and the Death Drive, 2004, Duke University Press, p. 7-9) SJCP//JG

Politics, to put this another way, names the space in which Imaginary relations, relations that hark back to a misrecognition of the self as enjoying some originary access to presence (a presence retroactively posited and therefore lost, one might say, from the start), compete for Symbolic fulfillment, for actualization in the realm of language to which subjectification subjects us all. Only the mediation of the signifier allows us to articulate those Imaginary relations, though always at the price of introducing the distance that precludes their realization: the distance inherent in the chain of ceaseless deferrals and substitutions to which language as a system of differences necessarily gives birth. The signifier, as alienating and meaningless token of our Symbolic constitution as subjects (as token, that is, of our subjectification through subjection to the prospect of meaning); the signifier, by means of which we always inhabit the order of the Other, the order of a social and linguistic reality articulated from somewhere; the signifier, which calls us into meaning by seeming call us to ourselves: this signifier only bestows a sort of promissory identity, one with which we can never succeed in fully coinciding because we, as subjects of the signifier, can only, be signifiers ourselves, can only ever aspire to catch up to [be what] whatever it is we might signify by closing the gap that divides us and, paradoxically, makes us subjects through that act of division alone. This structural inability of the subject to merge with the self for which it sees itself as a signifier in the eyes of the Other necessitates various strategies designed to suture the subject in the space of meaning where Symbolic and Imaginary overlap. Politics names the social enactment of the subject's attempt to establish the conditions for this impossible consolidation by identifying with something outside of itself in order to enter the presence, deferred perpetually, of itself. Politics, that is, names the struggle to effect a fantasmic order of reality in which the subject's alienation would vanish into the seamlessness of identity at the endpoint of the endless chain of signifiers lived as history. If politics in the Symbolic is always therefore a politics of the Symbolic, operating in the name and in the direction of a constantly anticipated futurity, then the telos that would, in fantasy, put an end to these deferrals, the presence toward which the metonymic chain of signifiers always aims, must be recognized, nonetheless, as belonging to an Imaginary past. This means not only that politics conforms to the temporality of desire, to what we might call the inevitable historicity of desire- the successive displacements forward of nodes of attachment as figures of meaning, points of intense metaphoric investment, produced in the hope, however vain, of filling the constitutive gap in the subject that the signifier necessarily installs- but also that politics is name for the temporalization of desire, for its translation into a narrative, for its teleological determination.

#### Notions of progress that pass through the aff is rooted in futurism that is built upon the symbol of the child which will always exclude the queer from the political as they are seen as useless to that image

**Edelman 2** (Lee Edelman, No Future: Queer Theory and the Death Drive, 2004, Duke University Press, p. 10-13) SJCP//JG

Politics, then, in opposing itself to the negativity of such a drive, gives us history as the continuous staging of our dream of eventual self-realization by endlessly reconstructing, in the mirror of desire, what we take to be reality itself. And it does so without letting us acknowledge that the future, to which it persistently appeals, marks the impossible place of an Imaginary past exempt from the deferrals intrinsic to the operation of the signifying chain and projected ahead as the site at which being and meaning are joined as One. In this it enacts the formal repetition distinctive of the drive while representing itself as bringing to fulfillment the narrative sequence of history and, with it, of desire, in the realization of the subject's authentic presence in the Child imagined as enjoying unmediated access to Imaginary wholeness. Small wonder that the era of the universal subject should produce as the very figure of politics, because also as the embodiment of futurity collapsing undecidably into the past, the image of the Child as we know it: the Child who becomes, in Wordsworth's phrase, but more punitively, "father of the Man." Historically constructed, as social critics and intellectual historians including Phillipe Aries, James Kincaid, and Lawrence Stone have made clear, to serve as the repository of variously sentimentalized cultural identifications, the Child has come to embody for us the telos of the social order and come to be seen as the one for whom that order is held in perpetual trust. In its coercive universalization, however, the image of the Child, not to be confused with the lived experiences of any historical children, serves to regulate political discourse-to prescribe what will count as political discourse-by compelling such discourse to accede in advance to the reality of a collective future whose figurative status we are never permitted to acknowledge or address. From Delacroix's iconic image of Liberty leading us into a brave new world of revolutionary possibility- her bare breast making each spectator the unweaned Child to whom it's held out while the boy to her left, reproducing her posture, affirms the absolute logic of reproduction itself-to the revolutionary waif in the logo that miniaturizes the "politics" of Les Mis (summed up in its anthem to futurism, the "inspirational" "One Day More"), we are no more able to conceive of a politics without a fantasy of the future than we are able to conceive of a future without the figure of the Child. That figural Child alone embodies the citizen as an ideal, entitled to claim full rights to its future share in the nation's good, though always at the cost of limiting the rights "real" citizens are allowed. For the social order exists to preserve for this universalized subject, this fantasmatic Child, a notional freedom more highly valued than the actuality of freedom itself, which might, after all, put at risk the Child to whom such a freedom falls due. Hence, whatever refuses this mandate by which our political institutions compel the collective reproduction of the Child must appear as a threat not only to the organization of a given social order but also, and far more ominously, to social order as such, insofar as it threatens the logic of futurism on which meaning always depends. So, for example, when D. James, in her novel Children of Men, imagines a future in which the human race has suffered a seemingly absolute loss of the capacity to reproduce, her narrator, Theodore Faron, not only attributes this reversal of biological fortune to the putative crisis of sexual values in late twentieth-century democracies-"Pornography and sexual violence on film, on television, in books, in life had increased and became more explicit but less and less in the West we made love and bred children," he declares-but also gives voice to the ideological truism that governs our investment in the Child as the obligatory token of futurity: "Without the hope of posterity, for our race not for ourselves, without the assurance that we being dead yet live," he later observes, "all pleasures of the mind and senses sometimes seem to me no more than pathetic and crumbling defences shored up against our ruins."12 While this allusion to Eliot's "The Waste Land" may recall another of its well-known lines, one for which we apparently have Eliot's Wife, Vivian, to thank-"What you get married for if you don't want children?"-it also brings out the function of the child as the prop of the secular theology on which our social reality rests: the secular theology that shapes at once the meaning of our collective narratives and our collective narratives of meaning. Charged, after all, with the task of assuring "that we being dead yet live," the Child, as if by nature (more precisely, as the promise of a natural transcendence of the limits of nature itself), exudes the very pathos from which the narrator of The Children of Men recoils when he comes upon it in nonreproductive "pleasures of the mind and senses." For the "pathetic" quality he projectively locates in non-generative sexual enjoyment-enjoyment that he views in the absence of futurity as empty, substitutive, pathological-exposes the fetishistic figurations of the Child that the narrator pits against it as legible in terms identical to those for which enjoyment without "hope of posterity" is peremptorily dismissed: legible, that is, as nothing more than "pathetic and crumbling defences shored up against our ruins." How better to characterize the narrative project of The Children of Men itself, which ends, as anyone not born yesterday surely expects from the start, with the renewal of our barren and dying race through the miracle of birth? After all, as Walter Wangerin Jr., reviewing the book for the New York Times, approvingly noted in a sentence delicately poised between description and performance of the novel's pro-procreative ideology: "If there is a baby, there is a future, there is redemption."13 If, however, there is no baby and, in consequence, no future, then the blame must fall on the fatal lure of sterile, narcissistic enjoyments understood as inherently destructive of meaning and therefore as responsible for the undoing of social organization, collective reality, and, inevitably, life itself.

#### anything hindering progress of the metaphorical child is subject to an ontological state of overkill

#### Stanley 11 Eric Stanley, Near Life, Queer Death: Overkill and Ontological Capture, 2011 SJ//VM

- Mbembe - “But what does it mean to do violence to what is nothing?”

**According to the autopsy** report, Travis County **medical examiner Dr.** Roberto **Bayardo cataloged at least fourteen blows to Lauryn’s head and more than sixty knife wounds to her body. The knife wounds were so deep that they almost decapitated her—a clear sign of overkill.** **Overkill is** a term used to indicate such **excessive violence that** it **pushes a body beyond death.** Overkill is often determined by the postmortem removal of body parts, as with the partial decapitation in the case of Lauryn Paige and the dissection of Rashawn Brazell. **The temporality of violence, the biological** **time when the heart stops pushing** **and pulling** **blood, yet the killing is not finished, suggests** **the aim is not** **simply** **the end of** **a** **specific life, but the ending** **of all queer life.** **This is the time of queer death, when the utility of violence gives way to the pleasure in the other’s mortality.** If queers, along with others, approximate nothing, then the task of ending, of killing, that which is nothing must go beyond normative times of life and death. In other words, **if** **Lauryn was** **dead after** **the first** **few stab wounds to the throat,** **then what do the remaining fifty wounds signify?** The legal theory that is offered to nullify the practice of overkill often functions under the name of the trans- or gay-panic defense. Both of these defense strategies argue that the murderer became so enraged after the “discovery” of either genitalia or someone’s sexuality they were forced to protect themselves from the threat of queerness. Estanislao Martinez of Fresno, California, used the trans-panic defense and received a four-year prison sentence after admittedly stabbing J. Robles, a Latina transwoman, at least twenty times with a pair of scissors. Importantly, this defense is often used, as in the cases of Robles and Paige, after the murderer has engaged in some kind of sex with the victim. **The logic of the trans-panic defense as an explanation for overkill, in its gory semiotics, offers us a way of understanding queers as the nothing of Mbembe’s query.** **Overkill names** **the technologies necessary** **to do away** **with** **that which is already gone. Queers** then **are the** specters of **life whose** **threat** **is** **so unimaginable that one is** **“forced,” not simply to murder, but to push them** **backward** **out of time, out of History, and into that which comes before.**

#### The alternative is to embrace the death drive – a full affirmation of queer negativity in which we reject the 1AC in favor of traversing the fantasy and realizing the structural positionality of queer identity.

**Edelman 3** (Lee Edelman, No Future: Queer Theory and the Death Drive, 2004, Duke University Press, p. 4-7) SJCP//JG

“Rather than rejecting, with liberal discourse, this ascription of negativity to the queer, we might, as I argue, do better to consider accepting and even embracing it. Not in the hope of forging thereby some more perfect social order-such a hope, after all, would only reproduce the constraining mandate of futurism, just as any such order would equally occasion the negativity of the queer-but rather to refuse the insistence of hope itself as affirmation, which is always affirmation of an order whose refusal will register as unthinkable, irresponsible, inhumane. And the trump card of affirmation? Always the question: If not this, what? Always the demand to translate the insistence, the pulsive force, of negativity into some determinate stance or "position" whose determination would thus negate it: always the imperative to immure it in some stable and positive form. When I argue, then, that we might do well to attempt what is surely impossible-to withdraw our allegiance, however compulsory, from a reality based on the Ponzi scheme of reproductive futurism-I do not intend to propose some "good" that will thereby be assured. To the contrary, I mean to insist that nothing, and certainly not what we calI the "good," can ever have any assurance at all in the order of the Symbolic. Abjuring fidelity to a futurism that's always purchased at our expense, though bound, as Symbolic subjects consigned to figure the Symbolic's undoing, to the necessary contradiction of trying turn its intelligibility against itself, we might rather, figuratively, cast our vote for "none of the above," for the primacy of a constant no in response to the law of the Symbolic, which would echo that law's foundational act, its self­constituting negation. The structuring optimism of politics to which the order of meaning commits us, installing as it does the perpetual hope of reaching meaning through signification, is always, I would argue, a negation of this primal, constitutive, and negative act. And the various positivities produced in its wake by the logic of political hope depend on the mathematical illusion that negated negations might somehow escape, and not redouble, such negativity. My polemic thus stakes its fortunes on a truly hopeless wager: that taking the Symbolic's negativity to the very letter of the law, that attending to the persistence of something internal to reason that reason refuses, that turning the force of queerness against all subjects, however queer, can afford an access to the jouissance that at once defines and negates us. Or better: can expose the constancy, the inescapability, of such access to jouissance in the social order itself even if that order can access its constant access to jouissance only in the process of abjecting that constancy of access onto the queer. In contrast to what Theodor Adorno describes as the "grimness with which a man clings to himself, as to the immediately sure and substantial," the queerness of which I speak would deliberately sever us from ourselves, from the assurance, that is, of knowing ourselves and hence of knowing our "good."4 Such queerness proposes, in place of the good, something I want to call "better," though it promises, in more than one sense of the phrase, absolutely nothing. I connect this something better with Lacan's characterization of what he calls "truth," where truth does not assure happiness, or even, as Lacan makes clear, the good.5 Instead, it names only the insistent particularity of the subject, impossible fully to articulate and "tend[ing] toward the real."6 Lacan, therefore, can write of this truth: The quality that best characterizes it is that of being the true Wunsch, which was at the origin of an aberrant or atypical behavior. We encounter this Wunsch with its particular, irreducible character as a modification that presupposes no other form of normalization than that of an experience of pleasure or of pain, but of a final experience from whence it springs and is subsequently preserved in the depths of the subject in an irreducible form. The Wunsch does not have the character of a universal law but, on the contrary, of the most particular of laws-even if it is universal that this particularity is to be found in every human being.' Truth, like queerness, irreducibly linked to the "aberrant or atypical," to what chafes against "normalization," finds its value not in a good susceptible to generalization, but only in the stubborn particularity that voids every notion of a general good. The embrace of queer negativity, then,- can have no justification if justification requires it to reinforce some positive social value; its value, instead, resides in its challenge to value as defined by the social, and thus in its radical challenge to the very value of the social itself. For by figuring a refusal of the coercive belief in the paramount value of futurity, while refusing as well any backdoor hope for dialectical access to meaning, the queer dispossesses the social order of the ground on which it rests: a faith in the consistent reality of the social-and by extension, of the social subject; a faith that politics, whether of the left or of the right, implicitly affirms. Divesting such politics of its thematic trappings, bracketing the particularity of its various proposals for social organization, the queer insists that politics is always a politics of the signifier, or even of what Lacan will often refer to as "the letter." It serves to shore up a reality always unmoored by signification and lacking any guarantee. To say as much is not, of course, to deny the experiential violence that frequently troubles social reality or the apparent consistency with which it bears-and thereby bears down on-us all. It is, rather, to suggest that queerness exposes the obliquity of our relation to what we experience in and as social reality, alerting us to the fantasies structurally necessary in order to sustain it and engaging those fantasies through the figural logics, the linguistic structures, that shape them. If it aims effectively to intervene in the reproduction of such a reality-an inter­vention that may well take the form of figuring that reality's abortion­ then queer theory must always insist on its connection to the vicissi­tudes of the sign, to the tension between the signifier's collapse into the letter's cadaverous materiality and its participation in a system of refer­ence wherein it generates meaning itself. As a particular story, in other words, of why storytelling fails, one that takes both the value and the burden of that failure upon itself, queer theory, as I construe it, marks the "other" side of politics: the "side" where narrative realization and derealization overlap, where the energies of vitalization ceaselessly turn against themselves; the "side" outside all political sides, committed as they are, on every side, to futurism's unquestioned good.

### 3

#### Permissibility and presumption negate – a. the resolution indicates the affirmative has to prove an obligation, and permissibility would deny the existence of an obligation b. Statements are more often false than true because any part can be false so negate because the aff is probably false

#### The aff burden is to prove that the resolutional statement is logical, and the reciprocal neg burden is to prove that the resolutional statement is illogical.

#### Prefer:

#### 1. Text – Oxford Dictionary defines ought as “used to indicate something that is probable.”

[https://en.oxforddictionaries.com/definition/ought //](https://en.oxforddictionaries.com/definition/ought%20//)Massa

#### Ought is “used to express logical consequence” as defined by Merriam-Webster

(<http://www.merriam-webster.com/dictionary/ought>) //Massa

#### 2. Debatability – a) my interp means debates focus on empirics about squo trends rather than irresolvable abstract principles that’ve been argued for years b) Moral oughts cannot guide action.

**Gray,** Grey, JW. "The Is/Ought Gap: How Do We Get "Ought" from "Is?"" *Ethical Realism*. N.p., 19 July 2011. Web. 28 Oct. 2015. //Massa

**The is/ought gap is a problem in moral philosophy where what is the case and what ought to be the case seem quite different, and it presents itself as the following question** to David Hume: **How do we *know* what morally ought to be the case from what is the case?** Hume posed the question in A Treatise of Human Nature Book III Part I Section I: In **every system of morality**, which I have hitherto met with, I have always remark’d that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs, when of a sudden I am surpriz’d to find, that instead of the usual copulations of propositions, is and is not, I meet with no proposition that is not connected with an ought, or an ought not. This change **is imperceptible**; but is, however, of the last consequence. **For as this ought**, or ought not, **expresses some new relation** or affirmation, ‘tis necessary that it shou’d be observ’d and explain’d; and at the same time that a reason shou’d be given, **for what seems altogether inconceivable**, how this new relation can be a deduction from others, which are entirely different from it. It is here that Hume points out that **philosophers argue about** various **nonmoral facts, then somehow conclude what ought to be the case** (or what people ought to do) **based on** those facts (about **what is the case**). **For example, we might find out that arsenic is poisonous and conclude that we ought not consume it. But we need to know how nonmoral facts can lead to moral conclusions. These two things seem unrelated. The is/ought gap [isn’t]** doesn’t seem like **a problem for nonmoral oughts**—what we ought to do to accomplish our goals, fulfill our desires, or maintain our commitments. For example, we could say, “If you want to be healthy, you ought not consume arsenic.” However, it might be morally wrong to consume arsenic. If it is, we have some more explaining to do.

#### 4. Neg definition choice – the affirmative can have all definitions in the doc and not read them under spec, which means you should prefer neg definitions

#### [1] Inherency – either a) the aff is non-inherent and you vote neg on presumption or b) it is and it isn’t logically going to happen.

#### [2] In order to say I want to fix x problem, you must say that you want x problem to exist, since it requires the problem exist to solve, which makes any moral attempt inherently immoral.

#### [3] member means “a body part or organ” (Marriam Webster) but a nation cannot have bodily organs so the resolutions incoherent

#### [4] To go anywhere, you must go halfway first, and then you must go half of the remaining distance ad infinitum – thus, motion is impossible because it necessitates traversing an infinite number of spaces in finite time.

#### [5] Property means “a building” (Oxford Languages) so reducing intellectual buildings is incoherent

### 4

#### Infrastructure is passing now and is at the top of Bidens agenda---Biden has enough PC but continuation is critical.

Nomikos 9/1 [William; 9/1/21; Assistant professor of political science at Washington University in St. Louis and director of the Data-driven Analysis of Peace Project; "*Everyone has an opinion on Afghanistan — Do voters care?*" The Hill, <https://thehill.com/blogs/congress-blog/politics/570422-everyone-has-an-opinion-on-afghanistan-do-voters-care>] Justin

On Aug. 15, Taliban fighters rolled into Kabul, the capital of Afghanistan. They faced little resistance. Within hours, the Taliban had seized control of the city. The airport plunged into chaos as thousands of Afghans sought refuge among departing American personnel. In February 2020, the Trump administration signed a peace agreement calling for the withdraw of American troops, but it is President Biden who ultimately pushed ahead and ended what he called “America’s longest war.” Even now, with the Taliban in Kabul, Biden remains defiant and defends his decision. Democrats worry this will hurt Biden politically, and Republicans are doing their best to make sure it does. But existing research suggests otherwise. Americans don’t prioritize foreign policy when voting International relations scholars long have argued that voters punish presidents who back down from confrontations with foreign adversaries, because doing so could tarnish the U.S.’s reputation abroad. But the magnitude of the effect on presidential approval varies depending on whether Democrats or Republicans are in power, the composition of the president’s constituency, and the persuasiveness of the justification for backing down. Indeed, as my own research has shown, the actual behavior of the president in crises may not matter at all. Ultimately, voters care about whether a president makes the right policy decisions, not whether American forces remain deployed abroad to maintain their reputation. What’s more, Americans are far more likely care about domestic issues such as health care or the economy than foreign policy. For example, even as Barack Obama rode opposition to the war in Iraq to electoral victory in 2008, more than five times as many respondents to the American National Elections Survey (ANES) listed the economy as the most important problem facing the nation compared to the war. Military interventions are unpopular with voters We tend to associate wars with “rally-around-the-flag” effects, in which conflicts lead to popularity bumps for presidents and their parties. Such effects may have been true during WWII, but 21st century military interventions are long, drawn out affairs — and political losers. This is due to what I’ve identified in past research as the time inconsistency between costs and benefits of military interventions. While the costs of intervention accrue immediately, both in terms of actual money as well as human lives, the best-case scenario benefits of intervention take decades, sometimes generations to bear fruit. For politicians facing election campaigns, this means that there is just no incentive to pay the costs of war up front when you might never see the benefits. In research I conducted on troop contributions to the war in Afghanistan, I found that contributors to the war effort — including the United States — withdrew around 10 percent of their forces whenever they were up for reelection. The politics of U.S. casualties Voters do care deeply about the loss of American lives. While images from Kabul evoke memories of Saigon and withdrawal from Vietnam, the more apt comparisons are the capture and failed rescue of U.S. hostages in Teheran following the Iranian revolution in 1979 or the Benghazi embassy attacks in Libya in 2011. Both the Iran hostage crisis and Benghazi negatively affected perception of two presidential candidates, Jimmy Carter and Hillary Clinton, respectively. Biden’s ability to avoid the political fallout might hinge on whether all Americans are evacuated safely. Sadly, this political calculus suggests there may be little room for humanitarian evacuations and refugee resettlements. While Biden has pledged to bring any trapped Americans home, there simply may not be much political incentive to evacuate Afghan refugees – especially if doing so endangers American lives. Moreover, accepting refugees means finding areas in the U.S. willing to resettle them. Conservative media commentators have already seized upon this issue, with one prominent pundit warning his viewers that they will be “invaded” by Afghan refugees. Biden’s political calculation Voters are not closely engaged with current events, often seeking to avoid politics altogether. Humanitarian disasters quickly disappear from headlines. Consider that less than a week after the Taliban overtook Kabul, news from Afghanistan did not make the front page of newspapers is several major cities. On the flip said, the potential costs of staying in Afghanistan would be enormous. Currently, President Biden is focused on getting Congress to pass a $1 trillion infrastructure bill and a $3.5 trillion budget reconciliation bill that, together, would comprise much of his first term agenda. Given the importance of these domestic issues to voters relative to foreign policy, passing the bills through Congress will be the most important politically for Biden. According to estimates, the war in Afghanistan alone has already cost American taxpayers more than $2.2 trillion. Concerns about the combined price tag of Democrats’ legislative agenda have triggered concerns about federal spending and inflation. More spending on Afghanistan would make Biden and his fellow Democrats even more vulnerable to such attacks. The slim margins in Congress suggests that Biden must reserve his political capital to maintain the existing coalitions to pass these two bills, not a new war effort. Doing so would also offer the Democrats the best chance for retaining control of Congress in the 2022 midterm elections.

#### Aff doesn’t solve but requires negotiations that saps PC.

Pooley 21 [James; Former deputy director general of the United Nations’ World Intellectual Property Organization and a member of the Center for Intellectual Property Understanding; “Drawn-Out Negotiations Over Covid IP Will Blow Back on Biden,” Barron’s; 5/26/21; <https://www.barrons.com/articles/drawn-out-negotiations-over-covid-ip-will-blow-back-on-biden-51621973675>] Justin

The Biden administration recently announced its support for a proposal before the World Trade Organization that would suspend the intellectual property protections on Covid-19 vaccines as guaranteed by the landmark TRIPS Agreement, a global trade pact that took effect in 1995.

The decision has sparked furious debate, with supporters arguing that the decision will speed the vaccine rollout in developing countries. The reality, however, is that even if enacted, the IP waiver will have zero short-term impact—but could inflict serious, long-term harm on global economic growth. The myopic nature of the Biden administration’s announcement cannot be overstated.

Even if WTO officials decide to waive IP protections at their June meeting, it’ll simply kickstart months of legal negotiations over precisely which drug formulas and technical know-how are undeserving of IP protections. And it’s unthinkable that the Biden administration, or Congress for that matter, would actually force American companies to hand over their most cutting-edge—and closely guarded—secrets.

As a result, the inevitable foot-dragging will cause enormous resentment in developing countries. And that’s the real threat of the waiver—precisely because it won’t accomplish either of its short-term goals of improving vaccine access and facilitating tech transfers from rich countries to developing ones. It’ll strengthen calls for more extreme, anti-IP measures down the road.

Experts overwhelmingly agree that waiving IP protections alone won’t increase vaccine production. That’s because making a shot is far more complicated than just following a recipe, and two of the most effective vaccines are based on cutting-edge discoveries using messenger RNA.

As Moderna Chief Executive Stephane Bancel said on a recent earnings call, “This is a new technology. You cannot go hire people who know how to make the mRNA. Those people don’t exist. And then even if all those things were available, whoever wants to do mRNA vaccines will have to, you know, buy the machine, invent the manufacturing process, invent creation processes and ethical processes, and then they will have to go run a clinical trial, get the data, get the product approved and scale manufacturing. This doesn’t happen in six or 12 or 18 months.”

Anthony Fauci, the president’s chief medical adviser, has echoed that sentiment and emphasized the need for immediate solutions. “Going back and forth, consuming time and lawyers in a legal argument about waivers—that is not the endgame,” he said. “People are dying around the world and we have to get vaccines into their arms in the fastest and most efficient way possible.”

Those claiming the waiver poses an immediate, rather than long-term, threat to IP rights also misunderstand what the waiver will—and won’t—do.

The waiver petition itself is more akin to a statement of principle than an actual legal document. In fact, it’s only a few pages long.

As the Office of the United States Trade Representative has said, “Text-based negotiations at the WTO will take time given the consensus-based nature of the institution and the complexity of the issues involved.” The WTO director-general predicts negotiations will last until early December.

That’s a lot of wasted time and effort. The U.S. Trade Representative would be far better off spending the next six months breaking down real trade barriers and helping export our surplus vaccine doses and vaccine ingredients to countries in need.

#### That solves existential climate change.

Castillo 21 [Rhyma; 8/16/21; News and politics writer at Elite Daily, where she's passionate about advocating for underserved communities throughout the United States. She’s covered issues in politics, immigration, environmental racism, climate change, gun violence, and more. After graduating with an English degree from Texas A&M Unversity, Rhyma has worked as a technical writer and test author at Educational Testing Service (ETS), a copywriter for Mightier Content, and as a Creative Operations Specialist at GoDaddy. She also has bylines as a freelancer at the San Antonio Current, where her reporting on local news, politics, tech, and entertainment has been widely circulated; “*Experts Explain What You Can Do About Climate Change After That Scary IPCC Report*,” Elite Daily, <https://www.elitedaily.com/news/what-you-can-do-climate-change-after-ipcc-report>] Justin

I’ll be honest: climate change is something I have a daily existential crisis over — and with its effects quite literally showing up on people’s doorsteps in the form of floods, wildfires, record heatwaves, and more, I know I’m not alone. On Aug. 9, the Intergovernmental Panel on Climate Change (IPCC) released an alarming report that was characterized as a “code red for humanity,” which is terrifying, to say the least. But while it’s easy to surrender to fatalist feelings of doom and gloom, there’s still time to turn things around. So, according to experts, here’s what you can do about climate change after the IPCC report. While experts agree that reducing, reusing, and recycling on an individual level is important, they acknowledge it isn’t the main solution to climate change, which is a largely institutional problem. According to a 2017 report from the Carbon Disclosure Project (CDP), researchers found that just 100 companies were responsible for over 70% of greenhouse gas emissions since 1988, with the top 10 emitters being fossil-fuel based energy corporations. “I'm not suggesting that individual actions aren't good or important,” states Cara Horowitz, J.D., the co-executive director of the Emmett Institute on Climate Change and the Environment at UCLA School of Law. She adds that if you’re lucky enough to afford an electric vehicle, to select the green option on your energy bill, or to adopt an environmentally sustainable diet, you should absolutely do so. However, she notes that “[climate change] is not a problem that can be solved by individual lifestyle choices.” At least, not in place of widespread social, political, and institutional change. “There is an attempt, and in some ways it's often quite deliberate, to make individuals think it's their fault climate change is happening — if only they made different lifestyle choices, if only they recycled more or ate less meat, we [could] solve this problem,” Horowitz says. But one of the most effective ways to address the climate crisis head-on, she states, is to push for institutional change. Lesley Ott, Ph.D., meteorological researcher at NASA’s Global Modeling and Assimilation Office at Goddard Space Flight Center, agrees. “There’s a limit on how much good or bad any one person can do,” to combat climate change, she states. “This is a situation that’s come from billions of people over decades and decades,” she adds. While she notes that its still important to limit your energy consumption, she acknowledges that large corporations, such as those involved in natural gas, animal agriculture, and product manufacturing, can do a much better job of reducing their emissions. “As climate change is affecting more and more of our infrastructure,” she states, “there are opportunities some companies [could seize] to say ‘hey, you know, I can probably do the right thing for the planet.’” Trained HazMat workers clean up miles oil-drench sand after an off-shore oil spill occurred, Februa... Ott also explains how the climate crisis is both a very difficult and a very simple issue. “It’s simple in that we know what’s causing it,” she says. “We know this is because of greenhouse gases, and we know where the greenhouse gases come from. But it's tricky because those things [that cause greenhouse gases] are so fundamental to many aspects of our lives.” Across the United States and world, many people have no choice but to depend on large energy monopolies for light, gas, and heat. And many people simply cannot afford to purchase electric vehicles, adopt environmentally sustainable diets, or live in neighborhoods where green energy options are available. So, what’s the solution? According to Ott, the answer is clear: “We need to change the way we consume energy,” she states. “We know the path that we need to go down to combat climate change. And it's really up to our political leaders in our country and others to marshal the response, and really put the procedures in place to do just that, to reduce our emissions,” she adds. If it were up to Gavin Schmidt, Ph.D., director of GISS and Principal Investigator for the GISS ModelE Earth System Model at NASA, he’d combat the climate crisis using several strategies: shutting down coal power stations, phasing out natural gas, electrifying transportation systems, investing in infrastructure for more walk-able and bike-able cities, building a more unified power grid, and pushing for improved public transit. But while scientists have developed the technology and resources for these strategies, Schmidt notes many places — including the United States — simply haven’t invested in the infrastructure necessary to adopt these strategies. “The infrastructure is not all there,” he states. So while we certainly have the concepts and resources available, “we're still missing some practical application [for] those things,” he adds. “We have to make the investments, [and] those investments take a while to come to fruition.”

### Case

#### No 1AR Theory perfcons or independent voters– a] Resolvability: Either you auto accept all responses to 2NR standards and they auto win since I can't respond, or you intervene to give 2AR credence b] Structural skew: 7-6 time 2-1 speech skew for offense favors the Aff who speaks first and last and set the stage with a persuasive advantage c] No infinite abuse: 1NC is 7 minutes and 1AC spikes check

#### Isolated island populations repopulate Earth after radiation and nuclear winter – bunkers and submarines expand the likelihood of survival

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

#### Rigorous climate simulations prove that hydrophilic black carbon would cause to atmospheric precipitation – results in a rainout effect that quickly reverses nuclear cooling

Reisner et al. 18 (Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory. Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source. James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics. <MKIM> “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations”. 3/16/18. DOA: 7/13/19. <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>)

\*BC = Black Carbon

#### The no-rubble simulation produces a significantly more intense fire, with more fire spread, and consequently a significantly stronger plume with larger amounts of BC reaching into the upper atmosphere than the simulation with rubble, illustrated in Figure 5. While the no-rubble simulation represents the worst-case scenario involving vigorous fire activity, only a relatively small amount of carbon makes its way into the stratosphere during the course of the simulation. But while small compared to the surface BC mass, stratospheric BC amounts from the current simulations are significantly higher than what would be expected from burning vegetation such as trees (Heilman et al., 2014), e.g., the higher energy density of the building fuels and the initial fluence from the weapon produce an intense response within HIGRAD with initial updrafts of order 100 m/s in the lower troposphere. Or, in comparison to a mass fire, wildfires will burn only a small amount of fuel in the corresponding time period (roughly 10 minutes) that a nuclear weapon fluence can effectively ignite a large area of fuel producing an impressive atmospheric response. Figure 6 shows vertical profiles of BC multiplied by 100 (number of cities involved in the exchange) from the two simulations. The total amount of BC produced is in line with previous estimates (about 3.69 Tg from no-rubble simulation); however, the majority of BC resides below the stratosphere (3.46 Tg below 12 km) and can be readily impacted by scavenging from precipitation either via pyro-cumulonimbus produced by the fire itself (not modeled) or other synoptic weather systems. While the impact on climate of these more realistic profiles will be explored in the next section, it should be mentioned that these estimates are still at the high end, considering the inherent simplifications in the combustion model that lead to overestimating BC production. 3.3 Climate Results Long-term climatic effects critically depend on the initial injection height of the soot, with larger quantities reaching the upper troposphere/lower stratosphere inducing a greater cooling impact because of longer residence times (Robock et al., 2007a). Absorption of solar radiation by the BC aerosol and its subsequent radiative cooling tends to heat the surrounding air, driving an initial upward diffusion of the soot plumes, an effect that depends on the initial aerosol concentrations. Mixing and sedimentation tend to reduce this process, and low altitude emissions are also significantly impacted by precipitation if aging of the BC aerosol occurs on sufficiently rapid timescales. But once at stratospheric altitudes, aerosol dilution via coagulation is hindered by low particulate concentrations (e.g., Robock et al., 2007a) and lofting to much higher altitudes is inhibited by gravitational settling in the low-density air (Stenke et al., 2013), resulting in more stable BC concentrations over long times. Of the initial BC mass released in the atmosphere, most of which is emitted below 9 km, 70% rains out within the first month and 78%, or about 2.9 Tg, is removed within the first two months (Figure 7, solid line), with the remainder (about 0.8 Tg, dashed line) being transported above about 12 km (200 hPa) within the first week. This outcome differs from the findings of, e.g., Stenke et al. (2013, their high BC-load cases) and Mills et al. (2014), who found that most of the BC mass (between 60 and 70%) is lifted in the stratosphere within the first couple of weeks. This can also be seen in Figure 8 (red lines) and in Figure 9, which include results from our calculation with the initial BC distribution from Mills et al. (2014). In that case, only 30% of the initial BC mass rains out in the troposphere during the first two weeks after the exchange, with the remainder rising to the stratosphere. In the study of Mills et al. (2008) this percentage is somewhat smaller, about 20%, and smaller still in the experiments of Robock et al. (2007a) in which the soot is initially emitted in the upper troposphere or higher. In Figure 7, the e-folding timescale for the removal of tropospheric soot, here interpreted as the time required for an initial drop of a factor e, is about one week. This result compares favorably with the “LT” experiment of Robock et al. (2007a), considering 5 Tg of BC released in the lower troposphere, in which 50% of the aerosols are removed within two weeks. By contrast, the initial e-folding timescale for the removal of stratospheric soot in Figure 8 is about 4.2 years (blue solid line), compared to about 8.4 years for the calculation using Mills et al. (2014) initial BC emission (red solid line). The removal timescale from our forced ensemble simulations is close to those obtained by Mills et al. (2008) in their 1 Tg experiment, by Robock et al. (2007a) in their experiment “UT 1 Tg”, and © 2018 American Geophysical Union. All rights reserved. by Stenke et al. (2013) in their experiment “Exp1”, in all of which 1 Tg of soot was emitted in the atmosphere in the aftermath of the exchange. Notably, the e-folding timescale for the decline of the BC mass in Figure 8 (blue solid line) is also close to the value of about 4 years quoted by Pausata et al. (2016) for their long-term “intermediate” scenario. In that scenario, which is also based on 5 Tg of soot initially distributed as in Mills et al. (2014), the factor-of2 shorter residence time of the aerosols is caused by particle growth via coagulation of BC with organic carbon. Figure 9 shows the BC mass-mixing ratio, horizontally averaged over the globe, as a function of atmospheric pressure (height) and time. The BC distributions used in our simulations imply that the upward transport of particles is substantially less efficient compared to the case in which 5 Tg of BC is directly injected into the upper troposphere

#### Industrial civilization wouldn’t recover.

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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.

#### Extinction is inevitable from future technology.

**Sterling 18** Bruce Sterling, 6-1-2018, "When Nick Bostrom says “Bang”," WIRED, https://www.wired.com/beyond-the-beyond/2018/06/nick-bostrom-says-bang/

4.1 Deliberate misuse of nanotechnology In a mature form, molecular nanotechnology will enable the construction of bacterium-scale self-replicating mechanical robots that can feed on dirt or other organic matter [22-25]. Such replicators could eat up the biosphere or destroy it by other means such as by poisoning it, burning it, or blocking out sunlight. A person of malicious intent in possession of this technology might cause the extinction of intelligent life on Earth by releasing such nanobots into the environment.[9] The technology to produce a destructive nanobot seems considerably easier to develop than the technology to create an effective defense against such an attack (a global nanotech immune system, an “active shield” [23]). It is therefore likely that there will be a period of vulnerability during which this technology must be prevented from coming into the wrong hands. Yet the technology could prove hard to regulate, since it doesn’t require rare radioactive isotopes or large, easily identifiable manufacturing plants, as does production of nuclear weapons [23]. Even if effective defenses against a limited nanotech attack are developed before dangerous replicators are designed and acquired by suicidal regimes or terrorists, there will still be the danger of an arms race between states possessing nanotechnology. It has been argued [26] that molecular manufacturing would lead to both arms race instability and crisis instability, to a higher degree than was the case with nuclear weapons. Arms race instability means that there would be dominant incentives for each competitor to escalate its armaments, leading to a runaway arms race. Crisis instability means that there would be dominant incentives for striking first. Two roughly balanced rivals acquiring nanotechnology would, on this view, begin a massive buildup of armaments and weapons development programs that would continue until a crisis occurs and war breaks out, potentially causing global terminal destruction. That the arms race could have been predicted is no guarantee that an international security system will be created ahead of time to prevent this disaster from happening. The nuclear arms race between the US and the USSR was predicted but occurred nevertheless. 4.2 Nuclear holocaust[winter] The US and Russia still have huge stockpiles of nuclear weapons. But would an all-out nuclear war really exterminate humankind? Note that: (i) For there to be an existential risk it suffices that we can’t be sure that it wouldn’t. (ii) The climatic effects of a large nuclear war are not well known (there is the possibility of a nuclear winter). (iii) Future arms races between other nations cannot be ruled out and these could lead to even greater arsenals than those present at the height of the Cold War. The world’s supply of plutonium has been increasing steadily to about two thousand tons, some ten times as much as remains tied up in warheads ([9], p. 26). (iv) Even if some humans survive the short-term effects of a nuclear war, it could lead to the collapse of civilization. A human race living under stone-age conditions may or may not be more resilient to extinction than other animal species. 4.3 We’re living in a simulation and it gets shut down A case can be made that the hypothesis that we are living in a computer simulation should be given a significant probability [27]. The basic idea behind this so-called “Simulation argument” is that vast amounts of computing power may become available in the future (see e.g. [28,29]), and that it could be used, among other things, to run large numbers of fine-grained simulations of past human civilizations. Under some not-too-implausible assumptions, the result can be that almost all minds like ours are simulated minds, and that we should therefore assign a significant probability to being such computer-emulated minds rather than the (subjectively indistinguishable) minds of originally evolved creatures. And if we are, we suffer the risk that the simulation may be shut down at any time. A decision to terminate our simulation may be prompted by our actions or by exogenous factors. While to some it may seem frivolous to list such a radical or “philosophical” hypothesis next the concrete threat of nuclear holocaust, we must seek to base these evaluations on reasons rather than untutored intuition. Until a refutation appears of the argument presented in [27], it would intellectually dishonest to neglect to mention simulation-shutdown as a potential extinction mode. 4.4 Badly programmed superintelligence When we create the first superintelligent entity [28-34], we might make a mistake and give it goals that lead it to annihilate humankind, assuming its enormous intellectual advantage gives it the power to do so. For example, we could mistakenly elevate a subgoal to the status of a supergoal. We tell it to solve a mathematical problem, and it complies by turning all the matter in the solar system into a giant calculating device, in the process killing the person who asked the question. (For further analysis of this, see [35].) 4.5 Genetically engineered biological agent With the fabulous advances in genetic technology currently taking place, it may become possible for a tyrant, terrorist, or lunatic to create a doomsday virus, an organism that combines long latency with high virulence and mortality [36]. Dangerous viruses can even be spawned unintentionally, as Australian researchers recently demonstrated when they created a modified mousepox virus with 100% mortality while trying to design a contraceptive virus for mice for use in pest control [37]. While this particular virus doesn’t affect humans, it is suspected that an analogous alteration would increase the mortality of the human smallpox virus. What underscores the future hazard here is that the research was quickly published in the open scientific literature [38]. It is hard to see how information generated in open biotech research programs could be contained no matter how grave the potential danger that it poses; and the same holds for research in nanotechnology. Genetic medicine will also lead to better cures and vaccines, but there is no guarantee that defense will always keep pace with offense. (Even the accidentally created mousepox virus had a 50% mortality rate on vaccinated mice.) Eventually, worry about biological weapons may be put to rest through the development of nanomedicine, but while nanotechnology has enormous long-term potential for medicine [39] it carries its own hazards. 4.6 Accidental misuse of nanotechnology (“gray goo”) The possibility of accidents can never be completely ruled out. However, there are many ways of making sure, through responsible engineering practices, that species-destroying accidents do not occur. One could avoid using self-replication; one could make nanobots dependent on some rare feedstock chemical that doesn’t exist in the wild; one could confine them to sealed environments; one could design them in such a way that any mutation was overwhelmingly likely to cause a nanobot to completely cease to function [40]. Accidental misuse is therefore a smaller concern than malicious misuse [23,25,41]. However, the distinction between the accidental and the deliberate can become blurred. While “in principle” it seems possible to make terminal nanotechnological accidents extremely improbable, the actual circumstances may not permit this ideal level of security to be realized. Compare nanotechnology with nuclear technology. From an engineering perspective, it is of course perfectly possible to use nuclear technology only for peaceful purposes such as nuclear reactors, which have a zero chance of destroying the whole planet. Yet in practice it may be very hard to avoid nuclear technology also being used to build nuclear weapons, leading to an arms race. With large nuclear arsenals on hair-trigger alert, there is inevitably a significant risk of accidental war. The same can happen with nanotechnology: it may be pressed into serving military objectives in a way that carries unavoidable risks of serious accidents. In some situations it can even be strategically advantageous to deliberately make one’s technology or control systems risky, for example in order to make a “threat that leaves something to chance” [42]. 4.7 Something unforeseen We need a catch-all category. It would be foolish to be confident that we have already imagined and anticipated all significant risks. Future technological or scientific developments may very well reveal novel ways of destroying the world. Some foreseen hazards (hence not members of the current category) which have been excluded from the list of bangs on grounds that they seem too unlikely to cause a global terminal disaster are: solar flares, supernovae, black hole explosions or mergers, gamma-ray bursts, galactic center outbursts, supervolcanos, loss of biodiversity, buildup of air pollution, gradual loss of human fertility, and various religious doomsday scenarios. The hypothesis that we will one day become “illuminated” and commit collective suicide or stop reproducing, as supporters of VHEMT (The Voluntary Human Extinction Movement) hope [43], appears unlikely. If it really were better not to exist (as Silenus told king Midas in the Greek myth, and as Arthur Schopenhauer argued [44] although for reasons specific to his philosophical system he didn’t advocate suicide), then we should not count this scenario as an existential disaster. The assumption that it is not worse to be alive should be regarded as an implicit assumption in the definition of Bangs. Erroneous collective suicide is an existential risk albeit one whose probability seems extremely slight. (For more on the ethics of human extinction, see chapter 4 of [9].) 4.8 Physics disasters The Manhattan Project bomb-builders’ concern about an A-bomb-derived atmospheric conflagration has contemporary analogues. There have been speculations that future high-energy particle accelerator experiments may cause a breakdown of a metastable vacuum state that our part of the cosmos might be in, converting it into a “true” vacuum of lower energy density [45]. This would result in an expanding bubble of total destruction that would sweep through the galaxy and beyond at the speed of light, tearing all matter apart as it proceeds. Another conceivability is that accelerator experiments might produce negatively charged stable “strangelets” (a hypothetical form of nuclear matter) or create a mini black hole that would sink to the center of the Earth and start accreting the rest of the planet [46]. These outcomes seem to be impossible given our best current physical theories. But the reason we do the experiments is precisely that we don’t really know what will happen. A more reassuring argument is that the energy densities attained in present day accelerators are far lower than those that occur naturally in collisions between cosmic rays [46,47]. It’s possible, however, that factors other than energy density are relevant for these hypothetical processes, and that those factors will be brought together in novel ways in future experiments. The main reason for concern in the “physics disasters” category is the meta-level observation that discoveries of all sorts of weird physical phenomena are made all the time, so even if right now all the particular physics disasters we have conceived of were absurdly improbable or impossible, there could be other more realistic failure-modes waiting to be uncovered. The ones listed here are merely illustrations of the general case.