## 1

#### Interpretation: Intellectual property for medicine only refers to patents.

Oxfam [Oxfam is a British founded confederation of 20 independent charitable organizations focusing on the alleviation of global poverty, founded in 1942 and led by Oxfam International. It is a major nonprofit group with an extensive collection of operations, “Intellectual property and access to medicine”, No Date, [https://www.oxfamamerica.org/explore/issues/economic-well-being/intellectual-property-and-access-to-medicine/]//pranav](https://www.oxfamamerica.org/explore/issues/economic-well-being/intellectual-property-and-access-to-medicine/%5d//pranav)

* Independently – becomes an alt cause to plan solvency

Intellectual property (IP) has different forms; in the case of access to medicines, we are talking about patents. Patents are a public policy instrument aimed at stimulating innovation. By providing a monopoly through a patent—which gives inventors an economic advantage—governments seek to provide an incentive for R&D. At the same time, the public benefits from technological advancement.

#### Violation: Data exclusivity is IP on data from clinical trials, not on the medicine itself and is distinct from patent protection.

1AC Thrasher ’21 [Rachel, received a JD and a master’s degree in international relations, both from Boston University. She works on policy issues related to trade and investment agreements, trade law and development, economic relations between developing countries, and multilateral environmental agreements. She is the co-editor, alongside former Pardee Center Director Adil Najam, of a Pardee-sponsored book titled The Future of South-South Economic Relations. She teaches a course on trade and development at the Pardee School of Global Studies and continues to research areas of trade and investment agreements and their impact on development policy as part of the Global Economic Governance Initiative at Boston University, “Chart of the Week: How Data Exclusivity Laws Impact Drug Prices”, 05-21-2021, https://www.bu.edu/gdp/2021/05/25/chart-of-the-week-how-data-exclusivity-laws-impact-drug-prices/]//pranav

Data exclusivity is a form of intellectual property protection that applies specifically to data from pharmaceutical clinical trials. While innovator firms run their own clinical trials to gain marketing approval, generic manufacturers typically rely on the innovator’s clinical trials for the same approval. Data exclusivity rules keep generic firms from relying on that data for 5 to 12 years, depending on the specific law. Data exclusivity operates independently of patent protection and can block generic manufacturers from gaining marketing approval even if the patent has expired or the original pharmaceutical product does not qualify for patent protection.

Vote neg for limits – their interp explodes the topic to intellectual property protections on things other than medicine – that includes food, music, clinical trials, and more, all with distinct scenarios and no unified neg ground which makes pre-round prep impossible, killing clash. That controls the internal link to education – only terminal impact in debate and fairness – only thing under the judge’s jurisdiction.

CI: [1] rtb – debaters keep being marginally abusive [2] collapses – debate ab specified briteline

No rvis – silly & illogical – shouldn’t iwn for proving ur topical

## 2

#### Indigeneity connotates a state of non-ontology allowing for the construction of the human that legitimizes its self into a history of elimination, jettisoned from or assimilated into the national body to cohere settler temporality

Belcourt 16. Billy-Ray Belcourt is from the Driftpile Cree Nation. He is a 2016 Rhodes Scholar and is reading for an M.St. in Women’s Studies at the University of Oxford. He was named by CBC Books as one of six Indigenous writers to watch, and his poetry has been published or is forthcoming in Assaracus: A Journal of Gay Poetry, Red Rising Magazine, SAD Mag, mâmawi-âcimowak, PRISM International, and The Malahat Review. ("A POLTERGEIST MANIFESTO," 2016, *Feral Feminism*) vikas recut aaditg

Admittedly, the feral is a precarious space from which to theorize, sullied with an injurability bound up in the work of liberal humanism as such, an enterprise that weaponizes a set of moral barometers to distribute ferality unevenly to differently citizened and raced bodies—ones that are too close for comfort and must be pushed outside arm’s reach. Perhaps ferality traverses a semantic line of flight commensurate­ with that of savagery, barbarism, and lawlessness, concreting into one history of elimination: that is, a history of eliminating recalcitrant indigeneities incompatible within a supposedly hygienic social. The word savage comes from the Latin salvaticus, an alteration of silvaticus, meaning “wild,” literally “of the woods.” Of persons, it means “reckless, ungovernable” (“Savage”). In the space-time of settler states, savagery temporarily stands in for those subjectivities tethered to a supposedly waning form of indigeneity, one that came from the woods and, because of this, had to be jettisoned from or assimilated into the national body. Here is Audra Simpson on the history of Indian “lawlessness”: Its genealogy extends back to the earliest moments of recorded encounter, when Indians appeared to have no law, to be without order, and thus, to be in the colonizer’s most generous articulation of differentiation, in need of the trappings of civilization. “Law” may be one instrument of civilization, as a regulating technique of power that develops through the work upon a political body and a territory. (2014, 144) According to Simpson, the recognition of Indigenous peoples as lawless rendered them governable, motivating the settler state (here, Canada) to curate and thus contain atrophied indigeneities—and, consequently, their sovereignties, lands, and politics—within the borders of federal law (2014, 144-45). Similarly, in The Transit of Empire Jodi Byrd traces the epistemological gimmicks through which the concept of “Indianness” came to align with “the savage other” (2011, 27). For her, this alignment provided the “rationale for imperial domination” and continues to stalk philosophy’s patterns of thinking (ibid.). Simpson, writing about the Mohawks of Kahnawake, argues that “a fear of lawlessness” continues to haunt the colonial imaginary, thereby diminishing “Indigenous rights to trade and to act as sovereigns in their own territories” (2014, 145). We might take the following lyrics from the popular Disney film Pocahontas as an example of the ways indigeneity circulates as a feral signifier in colonial economies of meaning-making: [Ratcliffe] What can you expect From filthy little heathens? Their whole disgusting race is like a curse Their skin’s a hellish red They’re only good when dead They’re vermin, as I said And worse [English settlers] They’re savages! Savages! Barely even human. (Gabriel and Goldberg 1995) Savagery connotes a state of non-ontology: Indigenous peoples are forced to cling to a barely extant humanity and coterminously collapse into a putatively wretched form of animality. Savagery is lethal, and its Indian becomes the prehistoric alibi through which the human is constituted as such. Indigenous peoples have therefore labored to explain away this savagery, reifying whitened rubrics for proper citizenship and crafting a genre of life tangible within the scenes of living through that are constitutive of settler colonialism as such. These scenes, however, are dead set on destroying the remnants of that savagery, converting their casualties into morally compatible subjects deserving of rights and life in a multicultural state that stokes the liberal fantasy of life after racial trauma at the expense of decolonial flourishing itself. This paper is therefore interested in the subjectivities and forms of sociality that savagery destroys when applied from without, and the political work of appropriating that savagery in the name of decolonization. Ours is a form of indigeneity that hints at a fundamental pollutability that both confirms and threatens forms of ontology tethered to a taxonomized humanity built in that foundational episode of subjection of which Simpson speaks. I am suggesting that savagery always-already references an otherworld of sorts: there are forms of life abandoned outside modernity’s episteme whose expressivities surge with affects anomalous within the topography of settler colonialism. This paper is not a historicist or nostalgic attachment to a pre-savage indigeneity resurrected from a past somehow unscathed by the violence that left us in the thick of things in the first place. Instead, I emphasize the potentiality of ferality as a politics in a world bent on our destruction—a world that eliminates indigeneities too radical to collapse into a collective sensorium, training us to a live in an ordinary that the settler state needs to persist as such, one that only some will survive. This world incentivizes our collusion with a multicultural state instantiated through a myth of belonging that actively disavows difference in the name of that very difference. We are repeatedly hurried into a kind of waning sociality, the content and form of which appear both too familiar and not familiar enough. In short, we are habitually left scavenging for ways to go on without knowing what it is we want. Let’s consider Jack Halberstam’s thoughts on “the wild”: It is a tricky word to use but it is a concept that we cannot live without if we are to combat the conventional modes of rule that have synced social norms to economic practices and have created a world order where every form of disturbance is quickly folded back into quiet, where every ripple is quickly smoothed over, where every instance of eruption has been tamped down and turned into new evidence of the rightness of the status quo. (2013, 126) Where Halberstam finds disturbance, I find indigeneity-cum-disturbance par excellence. Halberstam’s “wild” evokes a potentiality laboured in the here and now and “an alternative to how we want to think about being” in and outside an authoritarian state (2013, 126-27). Perhaps the wild risks the decolonial, a geography of life-building that dreams up tomorrows whose referents are the fractured indigeneities struggling to survive a historical present built on our suffering. Ferality is a stepping stone to a future grounded in Indigenous peoples’ legal and political orders. This paper does not traffic in teleologies of the anarchic or lawless as they emerge in Western thought; instead, it refuses settler sovereignty and calls for forms of collective Indigenous life that are attuned to queerness’s wretched histories and future-making potentialities. Indigeneity is an ante-ontology of sorts: it is prior to and therefore disruptive of ontology. Indigeneity makes manifest residues or pockets of times, worlds, and subjectivities that warp both common sense and philosophy into falsities that fall short of completely explaining what is going on. Indigenous life is truncated in the biopolitical category of Savage in order to make our attachments to ourselves assimilable inside settler colonialism’s national sensorium. Settler colonialism purges excessive forms of indigeneity that trouble its rubrics for sensing out the human and the nonhuman. In other words, settler colonialism works up modes of being-in-the-world that narrate themselves as the only options we have. What would it mean, then, to persist in the space of savagery, exhausting the present and holding out for futures that are not obsessed with the proper boundary between human and nonhuman life? This paper now turns to the present, asking: what happens when indigeneity collides with queerness inside the reserve, and how might a feral theory make sense of that collision? Deadly Presents “I went through a really hard time… I was beaten; more than once. I was choked” (Klassen 2014). These were the words of Tyler-Alan Jacobs, a two-spirit man from the Squamish Nation, capturing at once the terror of queer life on the reserve and the hardening of time into a thing that slows down bodies and pushes them outside its securitized geographies. Jacobs had grown up with his attackers, attackers who were energized by the pronouncement of queerness—how it insisted on being noticed, how it insisted on being. When the dust settled, “his right eye [had] dislodged and the side of his faced [had] caved in” (ibid.). Settler colonialism is fundamentally affective: it takes hold of the body, makes it perspire, and wears it out. It converts flesh into pliable automations and people into grim reapers who must choose which lives are worth keeping in the world. It can turn a person into a murderer in a matter of seconds; it is an epistemic rupturing of our attachments to life, to each other, and to ourselves. It is as if settler colonialism were simultaneously a rescue and military operation, a holy war of sorts tasked with exorcising the spectre of queer indigeneity and its putative infectivity. I rehearse this case because it allows me to risk qualifying the reserve as a geography saturated with heteronormativity’s socialities. This is a strategic interdiction that destroys supposedly degenerative queer affect worlds, untangling some bodies and not others from the future. I don’t have the statistics to substantiate these claims, but there is an archive of heartbreak and loss that is easy to come by if you ask the right people. Indeed, what would such statistics tell us that we don’t already know? What would the biopolitical work of data collection do to a knowledge-making project that thinks outside the big worlds of Statistics and Demography and, instead, inside the smaller, more precarious worlds created in the wake of gossip? I worry about ethnographic projects that seek to account for things and theory in the material in order to map the coordinates of an aberration to anchor it and its voyeurs in the theatres of the academy. The desire to attach to a body is too easily energized by a biological reading of gender that repudiates the very subjects it seeks so desperately to know and to study. What about the body? I have been asked this question, again and again. A feral theory is something of a call to arms: abolish this sort of ethnography and turn to those emergent methodologies that might better make sense of the affects and life-forms that are just now coming into focus and have been destroyed or made invisible in the name of research itself. Queer indigeneity, to borrow Fred Moten’s description of blackness, might “come most clearly into relief, by way of its negation” (2014). Perhaps decolonization needs to be a sort of séance: an attempt to communicate with the dead, a collective rising-up from the reserve’s necropolis, a feral becoming-undead. Boyd and Thrush’s Phantom Past, Indigenous Presence thinks indigeneity and its shaky histories vis-à-vis the language of haunting, where haunting is an endurant facet of “the experience of colonialism” (Bodinger de Uriarte 2012, 303). But, for me, ghostliness is differentially distributed: some more than others will be wrenched into the domain of the dead and forced to will their own ontologies into the now. Perhaps the universalist notion that haunting is a metonym for indigeneity repudiates the very life-forms that it claims to include: those who are differently queered and gendered, and, because of this, haunt waywardly and in ways that cannot be easily predicted (Ahmed 2015). This paper thus takes an imaginative turn and proceeds with something of an incantation to summon the figure of the queer Indigenous poltergeist—the feral monster in the horror story of decolonization. Queer Indigenous poltergeists do not linger inaudibly in the background; we are beside ourselves with anger, we make loud noises and throw objects around because we are demanding retribution for homicide, unloved love, and cold shoulders. We do not reconcile; we escape the reserve, pillage and mangle the settler-colonial episteme. Our arrival is both uneventful and apocalyptic, a point of departure and an entry point for an ontology that corresponds with a future that has yet to come. Sometimes all we have is the promise of the future. For the queer Indigenous poltergeist, resurrection is its own form of decolonial love. The poltergeist is an ontological anomaly: a fusion of human, object, and ghost, a “creature of social reality” and a “creature of fiction” (Haraway 1991, 149). From the German poltern meaning “[to] make noise, [to] rattle” and Geist or “ghost,” it literally means “noisy ghost,” speaking into existence an anti-subjectivity that emerges in the aftermath of death or murder (“Poltergeist”). It is the subject of Tobe Hooper’s 1982 film Poltergeist, which tells a story of “a haunting based on revenge” (Tuck and Ree 2013, 652). The film’s haunting is a wronging premised on an initial wrong: the eponymous poltergeist materializes when a mansion is constructed on a cemetery—a disturbing of spirits, if you will. José Esteban Muñoz argues that “The double ontology of ghosts and ghostliness, the manner in which ghosts exist inside and out and traverse categorical distinctions, seems especially useful for… queer criticism” (2009, 46). In this paper, the poltergeist names the form which indigeneity takes when it brings queer matter into its folds. In other words, this essay evokes haunting as a metaphor to hint at the ways in which queerness was murderously absorbed into the past and prematurely expected to stay there as an effect of colonialism’s drive to eliminate all traces of sexualities and genders that wandered astray. The poltergeist conceptualizes the work of queer indigeneity in the present insofar as it does not presuppose the mysterious intentions of the ghost—an otherworldly force that is bad, good, and undetectable all at once. Instead, the poltergeist is melancholic in its grief, but also pissed off. It refuses to remain in the spiritual, a space cheapened in relation to the staunch materiality of the real, and one that, though housing our conditions of possibility, cannot contain all of us. We protest forms of cruel nostalgia that tether ghosts to a discarded past within which queer Indigenous life once flourished because we know that we will never get it back and that most of us likely never experienced it in the first place. We long for that kind of love, but we know it is hard to come by. I turn to the poltergeist because I don’t have anywhere else to go. Help me, I could say. But I won’t. Queer indigeneity, then, is neither here nor there, neither dead nor alive but, to use Judith Butler’s language, interminably spectral (2006, 33). We are ghosts that haunt the reserve in the event of resurrection. According to Indigenous and Northern Affairs Canada, a reserve is a “tract of land, the legal title to which is held by the Crown, set apart for the use and benefit of an Indian band” (“Terminology”). The “reserve system” is part of the dispossessory ethos through which the settler state reifies land as the sign of sovereignty itself, and thus effects the political death of indigeneity, decomposing it into nothingness, into contaminated dirt. Reserves are the products of imaginations gone wild; they are ruins that bear “the physical imprint of the supernatural” on arid land, on decaying trailers arranged like weathered tombstones (Tuck and Ree 2013, 653). They are borderlands that connote simultaneous possession and dispossession: they represent the collision between settler sovereignty (insofar as the Crown holds the legal title to the land) and indigeneity (pointing to a genre of life that is distinctly Indigenous). Reserves were—some might say they still are—zones of death that regulated and regulate the movements of Indigenous bodies, quarantining their putatively contaminated flesh outside modern life in order to preserve settler-colonial futurities. It is as if the reserve were a site of complete atrophy, where indigeneity is supposed to waste away or degenerate, where queerness has already bled out. Look at the blood on your hands! The queer Indigenous poltergeist, however, foregrounds what I call a “reserve consciousness” —an awareness of the deathliness of the reserve. A reserve consciousness might be a kind of critical phenomenology that, to use Lisa Guenther’s description of this sort of insurgent knowledge project, pulls up “traces of what is not quite or no longer there—that which has been rubbed out or consigned to invisibility” (2015): here, the so-called on-reserve Indian. It might be about becoming a frictive surface; by rubbing up against things and resisting motion between objects, we might become unstuck. Queer Indigenous poltergeists are what Sara Ahmed calls “blockage points”: where communication stops because we cannot get through (2011, 68). That is, queer indigeneity connotes an ethical impasse, a dead end that presents us with two options: exorcism or resurrection. If settler colonialism is topological, if it persists despite elastic deformations such as stretching and twisting, wear and tear, we might have to make friction to survive. I turn to the reserve because it is a geography of affect, one in which the heaviness of atmospheres crushes some bodies to death and in which some must bear the weight of settler colonialism more than others. The violence done to us has wrenched us outside the physical world and into the supernatural. Some of us are spirits—open wounds that refuse to heal because our blood might be the one thing that cannot be stolen. Does resistance always feel like resistance, or does it sometimes feel like bleeding out (Berlant 2011)? Feral Socialities I must leave the beaten path and go where we are not. Queerness, according to Muñoz, is not yet here; it is an ideality that “we may never touch,” that propels us onward (2009, 1). Likewise, Halberstam suggests that the presentness of queerness signals a kind of emerging ontology. He argues that failure “is something that queers do and have always done exceptionally well in contrast to the grim scenarios of success” that structure “a heteronormative, capitalist society” (2011, 2-3). For Muñoz, queer failure is about “doing something that is missing in straight time’s always already flawed temporal mapping practice” (2009, 174). We know, however, that this isn’t the entire story. Whereas Muñoz’s queer past morphs into the here and now of homonormativity’s carceral tempos, indigeneity’s queernesses are saturated with the trauma of colonialism’s becoming-structure. Queer death doubles as the settler state’s condition of possibility. Pre-contact queer indigeneities had been absorbed into colonialism’s death grip; however, this making-dead was also a making-undead in the enduring of ghosts (Derrida 1994, 310). If haunting, according to Tuck and Ree, “lies precisely in its refusal to stop,” then the queer Indigenous poltergeist fails to have died by way of time travel (2013, 642). Queer indigeneity might be a kind of “feral sociality”: we are in a wild state after escaping colonial captivity and domestication. When the state evicts you, you might have to become feral to endure. To be feral is to linger in the back alleys of the settler state. It is a refusal of settler statecraft, a strategic failing to approximate the metrics of colonial citizenship, a giving up on the ethical future that reconciliation supposedly promises. As an aside, I suspect that the settler state’s reconciliatory ethos is always-already a domesticating project: it contains Indigenous suffering within the spectacularized theatre of the Truth and Reconciliation Commission, building a post-Residential School temporality in which Indigenous peoples have been repaired through monetary reparations and storytelling. In the melodrama of reconciliation, the settler state wins its centuries-long war against Indian lawlessness by healing Indigenous peoples of the trauma that blocked them from becoming properly emotive citizens. Queer indigeneity, however, escapes discursive and affective concealment and therefore the category of the human itself, disturbing the binary clash between the living and nonliving by way of its un-humanity, a kind of “dead living” whereby flesh is animated through death. Perhaps we must become feral to imagine other space-times, to imagine other kinds of queerness. If settler colonialism incentivizes our collusion with the humanist enterprise of multiculturalism (and it does), what would it mean to refuse humanity and actualize other subject formations? In other words, how do the un-living live? Here, I want to propose the concept of “Indian time” to theorize the temporality and liminality of queer indigeneity as it festers in the slippage between near-death and the refusal to die. Indian time colloquially describes the regularity with which Indigenous peoples arrive late or are behind schedule. I appropriate this idiom to argue that the presentness of queer indigeneity is prefigured by an escape from and bringing forward of the past as well as a taking residence in the future. To be queer and Indigenous might mean to live outside time, to fall out of that form of affective life. Indian time thus nullifies the normative temporality of settler colonialism in which death is the telos of the human and being-in-death is an ontological fallacy. It connotes the conversion of queer indigeneity into non-living matter, into ephemera lurking in the shadows of the present, waiting, watching, and conspiring. Where Jasbir Puar argues that all things under the rubric of queer are always-already calculated into the state’s biopolitical mathematic, queer indigeneity cannot be held captive because it cannot be seen—we are still emerging in the social while simultaneously altering its substance (2012). If decolonization is, according to Tuck and K. Wayne Yang’s reading of Frantz Fanon, an “unclean break from a colonial condition,” perhaps the queer Indigenous poltergeist is feral enough to will a decolonial world into a future that hails rather than expels its ghosts (2012, 20). The queer Indigenous poltergeist might have nothing else to lose.

#### Systems of knowledge serve to institute and replicate settler colonialism — the human is a storytelling species and knowledge systems are always already being chartered through the replication of sociogenic codes

Wynter and McKittrick 15. Sylvia Wynter is a Professor Emerita at Stanford University. Katherine McKittrick is a professor in Gender Studies at Queen's University. She is an academic and writer whose work focuses on black studies, cultural geography, anti-colonial and diaspora studies, with an emphasis on the ways in which liberation emerges in black creative texts. (Sylvia Wynter: On Being Human as Praxis, *Duke University Press*, 2015) vikas

To resolve the aporia of this cognitive dilemma, I turn again to Césaire’s proposed new and hybrid bios / mythoi science of the Word. Here because, as he proposed, and as earlier cited, the study of the Word / the mythoi will now determine the study of the bios / of the brain, and this will thereby enable us to gain an external (demonic ground) perspective on the always already storytellingly chartered / encoded discursive formations / aesthetic fields, as well as of, co- relatedly, our systems of knowledge. And, with this gain insight into how these systems of knowledge, each together with its genre- specific “truth of solidarity,” all institute and **stably** replicate our genres **of being hybridly human** with the also communitarian viability of each respective societal order. Yet **with all of the above—including, in macro terms, the instituting of our contemporary secular and “single model” liberal (now neoliberal) monohumanist Western / Westernized transnational world system—what again must be emphasized is** that the respective “truths” of their knowledge systems are always already prespecified by **our** storytellingly chartered sociogenic replicator code of symbolic life / death, its Word and / or Bateson- type “descriptive statement” as rigorously discursively elaborated by its “status quo system of learning” and its overall epistemological order. **This order circularly ensures that each such genre- specific regime / program of truth, will law- likely function to semantically- neurochemically induce the performative enactment of** our ensemble of **always already role- allocated individual and collective behaviors** within the reflexly and subjectively experienced terms of a cognitively closed, thereby genre- specific and fictively eusocializing, autonomously functioning, higher- level living autopoietic system. Cosmogonies of Our Planetary Life and Our Chartered Codes of Symbolic Life and Symbolic Death: Fictively Induced Modes of Inter- Altruistic Kin Recognition and Auto- Instituted Pseudospeciated Mode of Kind KM: Here Wynter elaborates on storytelling beginnings and cosmogonies. She returns to her extension of Frantz Fanon’s conception of our being hybridly human, both bios and mythoi, in order to address the unsolved phenomenon of human consciousness. She explores how our chartering / encoding genre- specific cosmogonies provide the narrative source of our fictively eusocializing subjectivities, thus enabling us to be reborn- through- initiation as always already sociogenically encoded inter- altruistically kin- recognizing members of each referent- we. At the same time, however, **the law- like reification of** each fictively induced and subjectively experienced order of consciousness **of each referent- we is, itself, absolutized by** what Wynter identifies as **the law of cognitive closure**. SW: Fanon put forward the idea of our skin / masks, thereby of the hybridity of our being human, in 1952. Crick and Watson cracked the genetic code in 1953. Now, I argue that Fanon’s masks enact a “second set of instructions”: that of the sociogenic code of symbolic life / death. Further, within the overall enactment of each such “second set of instructions,” the ism of gender is itself—while only one member class—a founding member class. Gender is a founding member because in order to auto- institute ourselves as subjects of a genre- specific referent- we, we must, first, co- relatedly and performatively enact each such code’s “second set of instructions” at the familial level, in terms of our gender roles. We know of this brilliant concept of the performative enactment of gender from Judith Butler.60 I am suggesting that the enactments of such gender roles are always a function of the enacting of a specific genre of being hybridly human. Butler’s illuminating redefinition of gender as a praxis rather than a noun, therefore, set off bells ringing everywhere! Why not, then, the performative enactment of all our roles, of all our role allocations as, in our contemporary Western / Westernized case, in terms of, inter alia, gender, race, class / underclass, and, across them all, sexual orientation? All as praxes, therefore, rather than nouns. So here you have the idea that with being human everything is praxis. For we are not purely biological beings! As far as the eusocial insects like bees are concerned, their roles are genetically preprescribed for them. Ours are not, even though the biocentric meritocratic iq bourgeois ideologues, such as the authors of The Bell Curve, try to tell us that they / we are.61 So the question is: **What are the mechanisms, what are the technologies, what are the strategies by which we prescribe our own roles?** What is common to all are cosmogonies and origin narratives. The representations of origin, which we ourselves invent, **are then retroactively projected onto an imagined past.** Why so? Because each such projection is the shared storytelling origin out of which we are initiatedly reborn. In this case we are no longer, as individual biological subjects, primarily born of the womb; rather, we are both initiated and reborn as fictively instituted inter- altruistic kinrecognizing members of each such symbolically re- encoded genre- specific referent- we. This is to say we are all initiatedly reborn—renatus in Saint Thomas Aquinas’s Christian term—to subjectively experience ourselves as subjects of the same encoded symbolic life kind. Why this imperative? Because **for all genre- specific subjects who are reborn from the same eusocializing origin myth and / or cosmogony, their genetically encoded individual biological life and its attendant imperative of naked self- preservation must at the same time be**, via initiation, **aversively experienced as symbolic death.** 62 This is the concomitant condition of inducing in all subjects the mimetic desire for the group- collective symbolic life of its genre- specific referent- we, its fictive mode of pseudospeciated kind. **The centrality of the ritually initiated and enacted storytelling codes, and thus their positive / negative, symbolic** life / death **semantically- neurochemically activated “second set of instructions,”** **emerges** here: these codes are specific to each kind. **The** positive verbal meanings **attributed to their respective modes of kind** are alchemically transformed into living flesh**,** as **its members all reflexly subjectively experience themselves, in the mimetically desirable, because** opiate-rewarded, placebo terms of **that mode of** symbolic **life prescribed by the storytelling** code. This at the same time as they subjectively experience their former “born of the womb” purely biological life as mimetically aversive, because they are doing so in now opiate- reward- blocked symbolic death, nocebo terms.63 For the preservation of which of these lives, then, do you think wars are fought? In the wake of the answer to the above, we see our chartering cosmogonies as being isomorphic with what we now define as our “cultures”— in both cases **we are talking about our hybrid sociogenic codes and their “second set of instructions.”** These are **codes that are even able to override where necessary**—this with respect to our auto- instituted, non– genetically restricted fictive modes of eusociality—**the first set of instructions of our own dna** (unlike as is the case with all other primates). The logical corollary is this: our modes of auto- institution, together with their initiatory rituals of rebirth—as iconized by the ritual of Christian baptism—are indispensable to the enacting of the human as the only living species on Earth who is the denizen of its third and hybrid bios / mythoi level of existence! Our mode of hybrid living being alone—this together with our also hitherto always genre- specific bios / mythoi enacted orders of supraindividual consciousness—is thereby to arrive on the scene all at once! With the Big Bang of the biomutational Third Event! So you see now why we still can’t solve the problem of consciousness? In spite of the most dedicated efforts of natural scientists, brain scientists, and philosophers? For what becomes clear here is that our human orders of consciousness / modes of mind cannot exist outside the terms of a specific cosmogony. Therefore, human orders of consciousness / modes of mind cannot preexist the terms of the always already mythically chartered, genre- specific code of symbolic life / death, its “second set of instructions” and thus its governing sociogenic principle— or, as Keith Ward puts it, its nonphysical principle of causality.64 To give an example: here we are, we are talking and thinking. We are, in fact, reflexly talking and thinking in terms of Darwin’s biocosmogonically chartered definitive version—in The Descent of Man (1871)—of the British bourgeoisie’s ruling class’s earlier reinvention of Man1’s civic humanist homo politicus as that of liberal monohumanist Man2 as homo oeconomicus, together with its now fully desupernaturalized sociogenically encoded order of consciousness. These are the very terms, therefore, in which we ourselves, in now historically postcolonial / postapartheid contexts, are. If in our case, only mimetically so! This at the same time as we are also struggling to think outside the limits of the purely biocentric order of consciousness that is genre- specific to the Western bourgeoisie’s homo oeconomicus. But it’s extremely difficult to do, right? You know why? Because Darwinism’s powerful, seductive force as a cosmogony, or origin narrative, is due to the fact that it is the first in our human history to be not only part myth but also part natural science. In fact, this mutation—the part myth / part natural science workings of Darwinism—draws attention to Darwin’s powerful neoMalthusian conceptual leap.65 A leap by means of which—over and against Cardinal Bellarmine—Darwin was to definitively replace the biblical Cre- ation account of the origin of all forms of biological life, including the major bios aspect of our being hybridly human, with a new evolutionary account. Why, then, say that this Darwinian account is only part science? Biologist Glyn Isaac, in his essay “Aspects of Human Evolution” (1983), provides the answer. Isaac makes us aware of the ecumenically human trap into which Darwin had also partly fallen: Understanding the literature on human evolution calls for the recognition of special problems that confront scientists who report on this topic. Regardless of how the scientists present them, accounts of human origins are read as replacement materials for genesis. They fulfill needs that are reflected in the fact that all societies have in their culture some form of origin beliefs, that is, some narrative or configurational notion of how the world and humanity began. Usually, these beliefs do more than cope with curiosity, they have allegorical content, and they convey values, ethics and attitudes. The Adam and Eve creation story of the Bible is simply one of a wide variety of such poetic formulations. . . . The scientific movement which culminated in Darwin’s compelling formulation of evolution as a mode of origin seemed to sweep away earlier beliefs and relegate them to the realm of myth and legend. Following on from this, it is often supposed that the myths have been replaced by something quite different, which we call “science.” However, this is only partly true; scientific theories and information about human origins have been slotted into the same old places in our minds and our cultures that used to be occupied by the myths. . . . Our new origin beliefs are in fact surrogate myths, that are themselves part science, part myths. 66 So the trap, you see, is that of the paradox that lies at the core of our metaDarwinian hybridity. For what I’m saying is that as humans, we cannot / do not preexist our cosmogonies, our representations of our origins—even though it is we ourselves who invent those cosmogonies and then retroactively project them onto a past. We invent them in formulaic storytelling terms, as “donor figures” or “entities,” who have extrahumanly (supernaturally, but now also naturally and / or bioevolutionarily, therefore secularly) mandated what the structuring societal order of our genre- specific, eusocial or cultural present would have to be.67 As the French cultural anthropologist Maurice Godelier also makes clear, with respect to the above: we, too, hitherto have also systematically kept the reality of our own agency—from our origins until today—opaque to ourselves. 68 Thus all our humanly invented chartering cosmogonies, including our contemporary macro (monohumanistic / monotheistic) cosmogonies, are law- likely configured as being extrahumanly mandated.69 All such sacred theological discourses ( Judaism, Islamism, Christianity, for example) continue to function in the already theo- cosmogonically mandated cognitively closed terms that are indispensable to the enacting of their respective behavior- inducing and behavior- regulatory fictively eusocializing imperative. This is especially apparent, too, in the secular substitute monohumanist religion of Darwin’s neo- Malthusian biocosmogony: here, in the biocosmogony of symbolic life / death—as that of selection / dysselection and eugenic / dysgenic codes—the incarnation of symbolic life, will law- likely be that of the ruling- class bourgeoisie as the naturally selected (eugenic) master of Malthusian natural scarcity. With this emerges, cumulatively, the virtuous breadwinner, together with his pre- 1960s virtuous housewife, and, corelatedly, the savvy investor, the capital accumulator, or at least the steady job holder.70 In effect, wealth, no longer in its traditional, inherited freehold landowning form, but in its now unceasingly capital- accumulating, global form, is itself the sole macro- signifier of ultimate symbolic life. Symbolic death, therefore, is that of having been naturally dysselected and mastered by Malthusian natural scarcity: as are the globally homogenized dysgenic non- breadwinning jobless poor / the pauper / homeless / the welfare queens. Poverty itself, therefore, is the “significant ill” signifier of ultimate symbolic death and, consequently, capital accumulation, and therefore symbolic life signifies and narrates a plan of salvation that will cure the dysselected significant ill! **The systemic reproduction of** the real- life **categories** of both signifiers **are** indispensable **to the** continued enactment of **the ruling - class** bourgeoisie’s governing code of symbolic life / death and the defining of liberal (now neoliberal) monohumanist Man2. This now purely secular coding of life / death is itself discursively—indeed rigorously—elaborated bioepistemologically, on the model of a natural organism, by the disciplines of our social sciences and humanities, together with their respective genre- specific and ethno- class truths of solidarity.71 Consequently, **within the laws of** hybrid auto- institution and / or pseudospeciation the (**humanities and social science**) **disciplinary truths of solidarity enact** their biocosmogonically chartered **sociogenic code** of symbolic life / death, also **imperatively calling to be discursively elaborated in cognitively** (cum psychoaffectively / aesthetically) **closed terms.**

#### The 1AC’s appeal to innovation and western imperial science under the justification of inequality is grounded in the “jungle” functioning through a logic of biocolonialism

Barker 19 [Clare Barker is a an Associate Professor in English Literature (Medical Humanities) Their Areas of expertise : postcolonial literature; indigenous literature; disability studies; medical humanities. “Biocolonial Fictions: Medical Ethics and New Extinction

Discourse in Contemporary Biopiracy Narratives”https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7116577/pdf/EMS109293.pdf] //aaditg

The age of big pharma, population genetics, and global health initiatives that transcend national borders has ushered in new forms of extractivism that consist of mining the bodies of Indigenous people, their medicinal plants, and their traditional ecological knowledge (TEK) for their pharmacological potential. These new forms of scientific endeavour echo and reconfigure the colonialist appropriations of the past. As scholar and activist, Vandana Shiva, writes, ‘[t]he colonies have now been extended to the interior spaces, the “genetic codes” of life-forms from microbes and plants to animals, including humans’.1 Shiva terms the expropriation of Indigenous biological resources ‘biopiracy’, while other activists and critics apply the broader term ‘biocolonialism’ to the range of practices that extend colonialist logic to the acquisition of human and plant organic materials, genetic ‘data’, and medicinal knowledge. This term in particular highlights the marked continuities between European colonialist practices of land and resource appropriation and the research practices within what Laurelyn Whitt calls the ‘new imperial science’, which, ‘marked by the confluence of science with capitalism’ and acting ‘in the service of western pharmaceutical … industries’ (among others), ‘enabl[es] the appropriation of indigenous knowledge and resources at a prodigious and escalating rate’.2 The logic of biocolonial extractivism operates through a reorientation of the temporal formations of settler colonialism, which equate settler practices with development and consign Indigenous peoples to the past. The land dispossessions of the colonial era were facilitated by powerful narratives of inevitable Indigenous extinction: ‘vanishing Indians’, Maori and Aboriginal ‘dying races’. As critics have shown, contemporary biocolonialist initiatives operate on similar assumptions, under which indigenous biospecimens must be preserved and biological data acquired before they vanish forever. Joanna Radin demonstrates that, since the mid-twentieth century, the ability to freeze and store blood and other organic samples has ‘emerged as a potentially powerful strategy for preserving fragments of a world that appeared to be increasingly in flux’. It enables ‘biological material to be studied in the present and especially in the future’, when (whether due to genetic admixture, European diseases, or environmental damage produced by the industrialized global North) ‘the individuals from whom it had been extracted were expected to have disappeared or changed beyond recognition’.3 In this article, I explore the intertwined relationship between medical research ethics and the logic and ideology of biocolonialism as it is represented in two contemporary American novels, Ann Patchett’s State of Wonder (2011) and Hanya Yanagihara’s The People in the Trees (2013). These novels depict ‘medical adventurer[s]’4 undertaking biocolonialist excursions into the remote jungles of, respectively, the Amazon and the Pacific, and are centrally concerned with the methods and infrastructure of biomedical and pharmaceutical research. In both cases, the fictional scientists’ ethically problematic research practices implicate them in what Pauline Wakeford calls ‘two entangled narratives of death and disappearance: the grand récits of wildlife extinction and the vanishing Indian’.5 I focus in particular on how these texts, by presenting us with fictional bioethical quandaries related to human longevity and reproduction, engage with the new formulations of extinction discourse produced by the life sciences. Patrick Brantlinger asserts that colonial ‘extinction discourse was performative in the sense that it acted on the world as well as described it’.6 State of Wonder and The People in the Trees both imagine biological discoveries with the potential to extend human lifecycles, but these research endeavours are steeped in extinctionist ideology and themselves set in motion the decimation of previously thriving Indigenous communities. Aspirational narratives of ‘eternal life’ (in Yanagihara) and ‘world health’ (in Patchett) are underpinned by the knowledge that these communities, reframed as research subjects, are likely to vanish in the wake of what Warwick Anderson calls ‘scientific colonialism’, along with their unique ecosystems.7 The different narrative temporalities of these texts – Patchett’s anticipating a significant breakthrough in global health, Yanagihara’s narrated retrospectively from a position of irreversible loss – produce divergent valuations of human and nonhuman lives and different perspectives on the ethics of biopiracy, as I shall discuss. But in reading them together, I demonstrate how fictional engagements with biocolonial science illuminate the continuities between colonial-era extractivism and contemporary research practices. In their temporal reorientations and their ability to imagine actual and potential acts of extinction, these texts resituate extinction discourse squarely within the context of twentieth- and twenty-first-century bioscientific experimentation. State of Wonder follows Marina Singh, a pharmacologist for a multinational pharmaceutical corporation, Vogel, on her expedition into the Amazon to investigate the death in the field of her colleague, Anders Eckman, and to assess the progress of a senior scientist, Annick Swenson, who is developing a fertility drug for Vogel while living with a remote tribe, the Lakashi. Swenson has discovered that the Lakashi women’s practice of chewing bark from a particular local tree (the Martin tree) not only alters their reproductive chemistry, allowing them to conceive and give birth into their seventies and eighties, but also inoculates them against malaria. Alongside their work on the fertility drug, Swenson and her team are surreptitiously developing a malaria vaccine at Vogel’s expense, which will have little appeal logic tied up with numerous contemporary research initiatives, particularly the Human Genome Diversity Project. See, for example, to company shareholders even though it ‘will have enormous benefits to world health’, since ‘[t]he people who need a malarial vaccine will never have the means to pay for it’.8 As the narrative unfolds, the protection of the Lakashi, their lifeways, and their environment is pitted against this urgent global health imperative to save the lives of the ‘[e]ight hundred thousand children’ who, as Swenson tells Marina, ‘die every year of malaria’ in the so-called ‘Third World’.9 The People in the Trees is framed as the memoirs of Norton Perina, a ‘renowned immunologist’ who, as a young doctor in 1950, joins an anthropological expedition to U’ivu, a fictional Micronesian state.10 Along with his anthropologist colleagues, he ‘discovers’ a ‘lost tribe’ living on the island of Ivu’ivu whose ritual ingestion of a sacred turtle endemic to the island, the opa’ivu’eke, causes extended longevity, with some tribe members apparently living for several hundred years. Perina’s research on this phenomenon earns him a Nobel Prize for Medicine, but also kickstarts a rapid process of biocolonial incursion on this island that has ‘never [before] been colonized’, beginning with pharmaceutical companies, seeking to develop ‘age-retarding drugs, … anti-aging skin creams, [and] elixirs to restore male potency’, ‘swarming throughout Ivu’ivu on the hunt for the opa’ivu’eke’.11 It results in the extinction of the turtle, the razing of the island, and the decimation of the Ivu’ivuan community through an accelerated experience of the impacts of colonization, including forced displacement, alcoholism, and disease. Both texts emphasize the overdetermination of their respective jungle environments by longstanding colonialist tropes of exotic difference that are inflected by bioscientific discourse. The Pacific island, as Elizabeth DeLoughrey has demonstrated, has long been figured as a remote, ‘hermetically sealed laboratory’, ‘deemed ahistorical and isolated’ from modernity and therefore ideal for experimentation in anthropology, ecology, and nuclear science.12 The Amazon, meanwhile, is imagined as what Veronica Davidov terms a ‘pharmacopia’ that holds within its rich ecosystems ‘fantastic cures for illnesses that defy the capacities of the Western pharmaceutical industry’, or, as Dr Swenson puts it in State of Wonder, ‘some sort of magical medicine chest’.13 Under the globalized conditions of the biomedical and pharmaceutical industries, the jungle spaces outside the West are vulnerable to exploitation due to their construction as ‘global commons’ or ‘global resource frontier[s]’ available to be harvested for their medical riches.14 As Swenson asserts in an unapologetic utilization of extractivist rhetoric: ‘there is much to be taken from the jungle’.15 Through their focus on the activities of life scientists in the interconnected fields of big pharma and global health, both novels appear to offer a critique of the impacts of biocolonialism on Indigenous people and the ecosystems in which they exist. But, as I will show, Perina’s retrospective narration in The People in the Trees brings into critical focus the extinctionist logic of biocolonial science, while State of Wonder’s anticipatory positioning is ultimately bound up with the future-oriented rhetoric used to justify much exploitative and damaging scientific research.

#### The alternative is refusal – a political depression that recognizes reconciliation will never be enough and creates harmful optimism to the political. Instead, embrace an affective pessimism that grounds alternative futures. The question is not whether Native people want the world, but if the world wants Native people

Belcourt 2016 (Billy-ray Belcourt is from the Driftpile Cree Nation. He is a 2016 Rhodes Scholar and is reading for an M.St. in Women's Studies at the University of Oxford. He was named by CBC Books as one of six Indigenous writers to watch,Political Depression in a Time of Reconciliation, Jan 15, 2016, <http://activehistory.ca/2016/01/political-depression-in-a-time-of-reconciliation/)//NotJacob//recut> anop

It’s tough: knowing that you might not get the world you want and the world that wants you back, that your bones might never stop feeling achy and fragile from the wear and tear of mere existence, from the hard labour of getting through the day. Ours are bodies that have been depleted by time, that have been wrenched into a world they can’t properly bend or squirm into because our flesh is paradoxically both too much and not enough for it. In the wake of both eventful and slowed kinds of premature death, what does it mean that the state wants so eagerly to move Indigenous bodies, to touch them, so to speak? Reconciliation is an affective mess: it throws together and condenses histories of trauma and their shaky bodies and feelings into a neatly bordered desire; a desire to let go, to move on, to turn to the future with open arms, as it were. Reconciliation is stubbornly ambivalent in its potentiality, an object of desire that we’re not entirely certain how to acquire or substantiate, but one that the state – reified through the bodies of politicians, Indigenous or otherwise – is telling us we need. In fact, Justice Murray Sinclair noted that the launch of the Truth and Reconciliation Commission’s final report on December 15, 2015, puts us at the “threshold of a new era in this country.”[1] I am interested in how life might be lived willfully and badly in the face of governmental forms of redress when many of us are stretched thin, how reconciliation, though instantiating a noticeable shift in the national affective atmosphere,[2] doesn’t actually remake the substance of the social or the political such that we’re still tethered to scenes of living that can’t sustain us. What I am trying to get at is: reconciliation works insofar as it is a way of looking forward to being in this world, at the expense of more radical projects like decolonization that want to experiment with different strategies for survival.[3] This way of doing things isn’t working and, because of that, optimism is hard to come by. According to cultural theorist Ann Cvetkovich, political depression emerges from the realization “that customary forms of political response, including direct action and critical analysis, are no longer working either to change the world or to make us feel better.”[4] It is the pestering sense that whatever you do, it won’t be enough; that things will continue uninterrupted, teasing you because something different is all you’ve wanted from the start. To be politically depressed is to worry about the temporal reach of neoliberal projects like reconciliation, to question their orientation toward the future because the present requires all of your energy in order to feel like anything but dying. Political depression is of a piece with a dispossessory enterprise that remakes the topography of the ordinary such that the labour of maintaining one’s life becomes too hard to keep up. We have to wait for the then and there in the here and now; how do we preserve ourselves until then? As Leanne Simpson points out, reconciliation has been reparative for some survivors, encouraging them to tell their stories, to keep going, so to speak.[5] But, what of the gendered and racialized technologies of violence that created our scenes of living, scenes we’ve been forced to think are of our own choosing? Optimism for the work of reconciliation disappeared in the face of multiple crises: of Missing and Murdered Indigenous Women and Girls, of HIV infection rates, of mass incarceration, of diabetes, of suicide. Reconciliation, at once a heuristic and a form of statecraft, fakes a political that doesn’t actually exist as such, one that not only presupposes that we – Indigenous peoples, that is – are willing to stay attached to it, but that we are already folded into it, that we’ve already consented to it. What does it mean, for example, to consent to a nation-to-nation relationship if there are no other options to choose from? Reconciliation wants so badly to be a keyword of sorts, to contain so much inside its semantic confines, to be “wide-reaching in its explanatory power.”[6] I’m not surprised things have started to leak all over the place. Decolonization might need something of an affective turn: I think there are ways of being attuned to our bodies such that we can gauge if our visceral responses are trained or not, parasitic or not. In short: what do our tears signal, what do his – Justin Trudeau’s – signal? We cry because pain holds our world together. I don’t want pain to hold our world together anymore. Perhaps admitting we are politically depressed is one of the most important things we could do in this day and age. When survival becomes radical and death becomes part and parcel of the ordinary itself, political depression might be our only point of departure. But, political depression is also about dreaming up alternatives that can sustain your attachments to life. Cvetkovich reminds us that we need “other affective tools for transformation” because hope and blind allegiance have failed too many of us too often.[7] I am interested in the generative work of pessimism, how being fed up propels us onward, and keeps us grounded in the now, such that we can make it to the future, even if that’s just tomorrow. As Kim TallBear put it, we’ve been living in a post-apocalyptic world (in its ecological ruins and in the face of its crisis-making politics) for quite some time,[8] one that exhausts our bodies to the point of depression and death and one that slowly removes us from the non-normative or the astray.[9] We are stuck in the thick of things, left clinging to an impasse without an exit strategy. We might need reconciliation today, but Indigenous peoples need a more capacious world-building project for tomorrow, one that can bear all of us and the sovereignties built into our breathing. We should not be asked: do you want the world today? Instead, we should be asking: does the world want us?

## Case

### T/L

#### Data exclusivity isn’t correlated with high prices and increases health equality in the long term

Jack Ellis 17 [Jack Ellis is a journalist and editor who has written extensively on technology, investment, and innovation-related issues and a Contributor at Geneva Network.. Why regulatory data protection matters for medicines, Geneva Network (July 11, 2017) https://geneva-network.com/research/regulatory-data-protection-matters-medicines/]//anop

of India’s biotech regulation bill, and of IP protections more generally, have characterised RDP as another avenue for large pharmaceutical corporations to maintain a monopoly over the drugs they have invented, even after their patents expire. This, they argue, increases the price of medicines, restricting access to healthcare for the world’s poorer patients and creating insurmountable public welfare costs for developing nations. The main fear of critics is that RDP will drive up healthcare costs to unsustainable levels by prolonging the period of market exclusivity enjoyed by biologic drugs. However, research from Geneva Network suggests that such fears are ungrounded. Analysing the examples of Canada and Japan, which have both lengthened their respective terms of RDP in recent years, shows that state expenditure on pharmaceuticals as a percentage of GDP remained pretty much flat in the years preceding and following the change. Moreover, any consideration of the costs associated with longer RDP periods should also take into account the value they add in regards to long-term investment in, and availability of, treatments. The implementation of an RDP framework may even encourage more innovation, suggests Lybecker: “Regulatory data protection provides an additional form of IP protection and will delay biosimilar firms from bringing their product to market unless they generate their own preclinical and clinical safety and efficacy data.” While RDP may extend the period of time in which biologic drugs do not face biosimilar competition, several additional elements must be weighed against this effect, she adds. “First, data exclusivity incentivises innovation which results in the development of biologic treatments and cures that might not otherwise come into existence. Second, these medicines provide significant benefits to patients, both improving and extending their lives. This results in healthier individuals and cost savings to healthcare systems.” Source: ‘Will increasing the term of data exclusivity for biologic drugs in the TPP reduce access to medicines?’ Philip Stevens, Geneva Network, July 2015 Refraining from granting an innovator an RDP period may lead to much cheaper versions of the same drug arriving on the market more quickly. But this would only be a short-term benefit – and would be shortsighted too, Lasersohn suggests. “Data exclusivity may raise the cost of a particular drug,” he says. “But I think ‘supports the price’ is the better way to put it. It doesn’t raise prices above a natural level, but rather supports the price that the market should pay for the investment of time and money that has gone into the development of the drug.” Without the availability of IP rights like RDP in the biotech space, there wouldn’t be any drugs to begin with, he concludes. “The reality is that VCs are not required by law to invest in biotech. We could invest in social media and smartphone apps instead. But as a society, it is probably more important that we are able to fund the next Herceptin, rather than the next WhatsApp.”

#### There’s no relation between data exclusivity and high prices – Canada and Japan prove

Philip Stevens 15 [Director of the Geneva Network, a research and advocacy organization working on international health, trade, and intellectual property issues. Will Increasing the Term of Data Exclusivity for Biologic Drugs in the TPP Reduce Access to Medicines?, Center for Intellectual Property x Innovation Policy (8-6-2015) https://cip2.gmu.edu/2015/08/06/will-increasing-the-term-of-data-exclusivity-for-biologic-drugs-in-the-tpp-reduce-access-to-medicines/]//anop

Like several TPP countries, the governments of Canada and Japan have national health insurance systems, and cover most health care costs, including medicines. Unlike other TPP countries, Canada and Japan have in the past decade adopted substantially longer terms of RDP. Their experiences, captured in the data provided below, show that expenditures on medicines did not change appreciably from previous trends. In 2006 Canada changed its regulations in a way that effectively increased their RDP term from 0 years to 8 years. As shown in Figure 1 ( based on 2014 OECD data ), pharmaceutical spending as a percentage of total health spending has actually decreased since then. As indicated in Figure 2 below, over the same period (2005-2011) pharmaceutical expenditure as a percentage of GDP (blue bars) remained relatively stable after RDP was increased in Canada in 2006, whereas overall health spending as a percentage of GDP in Canada has gradually increased (red bars). Similarly, Japan increased data protection in 2007 from 6 to 8 years (effectively 9 yearsiv). As indicated by Figure 3, fluctuations in expenditures after that time have been in line with growth in health care spending as a percentage of GDP. In fact, in 2010 pharmaceutical spending decreased in a year where health care spending increased. Figure 4 shows that the gradual increases in pharmaceutical expenditure as a percentage of GDP in Japan between 2005 and 2010 (blue bars) was in line with the overall increase in health spending as a percentage of GDP in Japan over the same period (red bars). The past experiences of Canada and Japan described above indicate that increases in RDP terms do not result in meaningful increases in health care expenditures or expenditures on medicines relative to overall health care spending. There could be many explanations for this result, ranging from changes in procurement policies, to increases in the number of medicines whose patent terms have expired. The evidence presented above, however, suggests that those concerned about access to medicines and the financial sustainability of public healthcare systems should focus their attention on policies other than Regulatory Data Protection for medicines.

### Water War

[1] alt c auses ab Palestine relations too which hteh pla cannot resolve

#### [2] Adaptation solves

Gleick 18 [Peter Gleick, MacArthur “Genius” Fellowship and was elected to the U.S. National Academy of Sciences, world-renowned expert, innovator, and communicator on water and climate issues, cofounded the Pacific Institute, which he led as president until mid-2016, pHd from UC Berkeley, and Charles Iceland, s Director, Global and National Water Initiatives with WRI’s Food, Forests, and Water Programs, “Water, Security, & Conflict”, https://pacinst.org/wp-content/uploads/2018/08/Water-Security-and-Conflict\_Aug-2018-2.pdf]

Although water risks are growing worldwide, there are many risk-reducing options available to decision-makers. Some of these options include imposing water demand caps in water-stressed regions; replacing water-inefficient irrigation schemes with more efficient irrigation technologies (irrigation accounts for 70 percent of water withdrawals worldwide); planting water-efficient and drought-resistant crops; introducing social safety net programs; reducing global food loss and waste; reducing population growth rates; implementing urban water conservation measures; investing in wastewater treatment and reuse technologies; engaging in negotiation of watershed agreements; improving water data and information systems; investing in dams, dikes, and levees; protecting and restoring natural capital, including forests and wetlands; and helping countries strengthen their governance systems.

### ME War

[1] is ab Israel-iran which they havent’ won an internal link to

#### [2] The aff’s fear of the Iranian Revolutionary Guard is Orientalist and ignores the historical root causes of anti-American sentiment in Iran – reject the team.

Lever 12

Emily Lever (bachelor of arts in Comparative Literature from Princeton University). “An Orientalist Fantasy.” Nassau Weekly. December 6th, 2012. http://www.nassauweekly.com/an-orientalist-fantasy/

But the more I thought about this movie, the more I realized it simply gives an illusion of depth. A movie filmed with somewhat unconventional techniques, or featuring naturalistic dialogue and little plot, is automatically assumed to be “artsy” and thus philosophical, by association with the style of the French New Wave. Similarly Ben Affleck, said he drew on classics from the 70s like All the President’s Men for inspiration; and the pastiche of these films formulates a promise that we’re going to witness some well-informed reflection on how fucked-up politics are in the world, man. But Argo never delivers on this promise; it gets to have its cake and eat it too. Though the universe of the film is complex and interesting, content does not follow through on form. To clarify: Argo is set in a time when sincere hopes to change the world for the better had died with the 60s.The 70s produced movies that depicted reality not as it should be but as it was, in a gritty and increasingly explicit way, pushing the boundaries of what kind of content was permitted. Movies like The French Connection or The Day of the Jackal, and even indeed All the President’s Men, questioned ideas of what a hero was supposed to be, bringing to the screen violent, duplicitous men who skulked around in trench coats and used questionable means to achieve their ends. More “wholesome” protagonists and stories with a clear-cut morality were largely relegated to films set in alternate realities. The most perfect example of this is Star Wars: a struggle between good and evil that plays out in a fantastical world according to the mythic structure Joseph Campbell codified in The Hero’s Journey. The movie-within-the-movie, which I’ll refer to as “Argo”, is one such movie in which starkly differentiated “heroes” and “villains” face off in a fantasy world. But Argo, though it purports to paint the world with somewhat cynical realism, is just like “Argo.” Just as the setting of “Argo” is an Orientalist vision of an exotic pseudo-Middle Eastern fantasy world where anything can happen, Argo takes place in an Orientalist version of Tehran. This Tehran is so perilous and so alien that it might as well be a different planet: the locals are a de-individuated, inscrutable mass, in contrast with the differentiated main characters who are at a loss as to what to do in this society of seemingly irrational rules. For example, while the Americans are walking through the Grand Bazaar under the pretext of location scouting, one of them takes a picture of a shop. Cue the shop owner storming towards the photographer and yelling at her incomprehensibly in Persian, flying into an incoherent, screaming rage because she took a picture of his shop. Even when she gives the picture back, he does not calm down (implying he is irrational). The episode is overall frightening, unsettling, and it plays rather shamelessly on the worst fears of Westerners traveling to “exotic” countries: offending the locals, whom they imagine as superstitious and fixated on symbolic things (such as photography, which can signify possession of the object thus “captured”). And aside from the ways in which the audience is supposed to identify with the characters, the film presents a rosy moral paradigm where there are not just protagonists but heroes. These heroes are not as heroic as they seem. The CIA operatives are depicted as a group of ordinary American heroes, and the embassy employees as **blameless white-bread Americans in mortal danger from the dark, savage, inscrutable Iranian Revolutionary Guard who in their anti-American rage have taken to killing people** just for having Americans’ names in their Rolodex. Their escape is a clear victory for the forces of good. But the glory of this escapade becomes more dubious when you consider the historical context. Iranian-American relations were extremely tense and Iran was wracked by anti-American riots; what Affleck doesn’t really dwell upon is that there was a very substantial reason for this discontent. In the 1950s the CIA had toppled an Iranian Prime Minister for daring to nationalize Iran’s oil, which set the stage for Shah Mohammed Reza Pahlavi to enforce an authoritarian regime under the guise of Westernization and progressivism. When the Shah’s regime fell to the Islamic Revolution, the Iranian people wanted to hold the Shah accountable for his unjust governance, and when the US refused to extradite him, Iranians saw the US as denying them justice and basically deciding whether the Shah would answer for what he’d done when the choice was not America’s or the CIA’s to make. Hence the riots and the hostage taking and the danger the US diplomats were in. So this movie as about how the CIA meddled in Iran’s affairs because US citizens were in danger because Iranians resented the US for meddling in Iran’s affairs. The film opens by giving background on this historical context but then goes right on to portray the CIA as heroic for doing exactly what Iranians resented it for doing. These concerns—Orientalism and the moral paradigm—were quickly evident to me, or at least I knew right away how I felt about these aspects of the movie. The one thing that still eluded me days after was why the film was named Argo. Was it a modern adaptation of the myth of Jason and the Argonauts? Both go something like this.. The hero (Jason/Tony Mendez) must leave his homeland to seek a precious MacGuffin (the Golden Fleece/six US diplomats) guarded by a vigilant, evil entity (a dragon/the Revolutionary Guard). No one thinks he’ll succeed; the endeavor seems doomed. The hero asks an authority figure (Phineas/the Ministry of Culture and Guidance) for help (sailing directions/a film permit) to reach his goal. He and his companions (the Argonauts/the diplomats) must pass through a dangerous place (the Symplegades/the Grand Bazaar). These parallels aside, it is also worth noticing that the script deviates from historical events on occasion in order to fit this framework—possibly to give priority to the mythological allusion? So it’s possible that Argo is indeed inspired by the myth of Jason and the Argonauts, but the parallels may be there just because it happens that both follow Campbell’s schema of the Hero’s Journey. After all, by definition it describes most narratives, and movie scripts are deliberately crafted to fit this emotionally satisfying framework. In short, the parallels are inconclusive. But that doesn’t end up mattering because calling the movie Argo lends it an air of something that has a meaningful relationship to classical culture. The title is evocative of many things without really realizing anything, which makes it really a perfect title for this movie that is only deep on the surface.

### Russia

#### Russia is modernizing to Surprise nuclear HEMP attack the United States

Peter Pry 1-25 (Peter Vincent Pry served on the staffs of the Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack, the U.S. House Armed Services Committee, and the Central Intelligence Agency. He currently is director of the U.S. Nuclear Strategy Forum and president of EMPACT America, “The Russian Federation’s Military Doctrine, Plans, and Capabilities for Electromagnetic Pulse (EMP) Attack” WVW Broadcast Network, 1-25-21, https://www.worldviewweekend.com/news/article/russian-federations-military-doctrine-plans-and-capabilities-electromagnetic-pulse-emp)//babcii

“Super-EMP is a…first-strike weapon,” according to Aleksey Vaschenko, who describes Russian nuclear weapons specially designed to make extraordinarily powerful EMP fields as Russia’s means for defeating the United States in “A Nuclear Response To America Is Possible”: “The further direction of the work on the development of Super-EMP was associated with the increase of its kill effect by focusing Y-radiation, which should have resulted in an increase of the pulse’s amplitude. These properties of Super-EMP make it a first strike weapon, which is designed to disable the state and military command and control system, the economy, ICBMs, especially mobile based ICBMs, missiles on the flight trajectory, radar sites, spacecraft, energy supply systems, and so forth. So, Super-EMP is obviously offensive in nature and is a destabilizing first-strike weapon…The Russian nuclear component relies on the Super-EMP factor, which is the Russian response to U.S. nuclear blackmail.” Hypersonic Warheads: New HEMP Threat Russian development of hypersonic missile warheads is a dangerous new dimension of the nuclear and HEMP threat. Great speed (Mach 20, twenty times the speed of sound) and flying a flat trajectory, skimming along the top of the upper atmosphere, significantly reduces visibility to U.S. early-warning satellites and radars, while also reducing arrival time. Maneuvering makes hypersonic warheads more difficult to track and intercept, virtually impossible to intercept with existing U.S. National Missile Defenses. Former senior Defense Department official Dr. Mark Schneider writes, “The main reason for Russian hypersonic missiles is a nuclear surprise attack and America has no defense against it.” Four-star General John Hyten, then chief of the U.S. Strategic Command that controls the nuclear Triad (now Vice Chairman Joint Chief of Staff), agrees with Schneider: “Hypersonic capabilities are a significant challenge. We are going to need a different set of sensors to see hypersonic threats. Our enemies know that.” Russia deployed its first regiment of SS-19 ICBMs armed with hypersonic Avangard nuclear warheads at the end of December 2019. Hypersonic vehicles fly over most of their trajectory at 50-100 kilometers altitude: the optimum height-of-burst for Super-EMP warheads. Hypersonic weapons are potentially a new avenue for surprise nuclear HEMP attack that could defeat deterrence. We cannot see the attack coming and may not know against whom to retaliate, especially if HEMP attack blinds satellites and radars needed for early-warning and threat assessment. Hypersonically delivered HEMP attack could win World War III with a single electronic blow.

#### That ionizes Van Allen belts and destroys all SATS

Peter Pry 20 (Peter Vincent Pry served on the staffs of the Commission to Assess the Threat to the United States from Electromagnetic Pulse Attack, the U.S. House Armed Services Committee, and the Central Intelligence Agency. He currently is director of the U.S. Nuclear Strategy Forum and president of EMPACT America, “Have Russia And China Already 'Militarized' Space?”, Real Clear Defense, July 16, 2020, https://www.realcleardefense.com/articles/2020/07/16/have\_russia\_and\_china\_already\_militarized\_space\_115469.html)//babcii

HEMP and SGEMP High-altitude EMP (HEMP) from a nuclear detonation in space propagates downward through the atmosphere, not through the vacuum of space, so no Russian or PRC satellites would be at risk from HEMP, unless the HEMP field is over China or Russia so satellite ground stations could be damaged—a highly unlikely scenario, that Moscow or Beijing would make a HEMP attack on themselves. Satellites are at risk from an exo-atmospheric detonation for HEMP from the gamma rays. If they reach the satellite and are close enough, they can damage satellites by a phenomenon called System Generated EMP (SGEMP).[[xiv]](https://www.realcleardefense.com/articles/2020/07/16/have_russia_and_china_already_militarized_space_115469.html" \l "_edn14) But Russia and China have almost certainly hardened their satellites against SGEMP and other phenomena that might be generated by the worst-case SGEMP threat they plan to employ: a Super-EMP weapon which is designed specifically to produce powerful gamma rays. The U.S. hardens military satellites against SGEMP too, but probably not against the SGEMP produced by Super-EMP weapons, as the U.S. has no Super-EMP weapons. The U.S. does not even have simulators for Super-EMP weapons to test against this threat. China and Russia can further protect their LEO satellites (those most at risk) from SGEMP by timing the HEMP attack so their satellites are over-the-horizon and will not be illuminated by gamma rays. An exo-atmospheric nuclear detonation for HEMP can also damage LEO satellites by “pumping” the Van Allen belt with ionized particles, as happened after the 1962 STARFISH PRIME high-yield exo-atmospheric nuclear test that inadvertently damaged U.S. satellites.[[xv]](https://www.realcleardefense.com/articles/2020/07/16/have_russia_and_china_already_militarized_space_115469.html" \l "_edn15) Satellites can be hardened to survive this environment too, and presumably would be if HEMP attack is an important military option, as it is for Russia and China. Ionization of the Van Allen belt is a much bigger threat to LEO satellites if the HEMP attack uses a high-yield weapon detonated above 100 kms HOB—and this too is another way of using a nuclear detonation in space to sweep the skies of U.S. satellites.

#### Increased ionizaiton prevents space col

Daniel **Baker 14**, Director of the Laboratory for Atmospheric and Space Physics, as well as a professor in atmospheric and planetary sciences, and in physics, at the University of Colorado-Boulder, "New Twists in Earth's Radiation Belts," American Scientist, 2014, https://www.americanscientist.org/article/new-twists-in-earths-radiation-belts.

The satellite carried a pioneering scientific payload, prepared at the State University of Iowa by a team of researchers led by James A. Van Allen. And the instruments on Explorer I made the first revolutionary discovery of the Space Age: Earth is enshrouded in doughnut-shaped rings, or toroids, of high-energy, high-intensity radiation. The discovery of those radiation belts—now called the Van Allen belts—revealed how Earth’s magnetic field interacts with the space environment around it. The field, generated by Earth’s molten metallic core and planetary spin, creates the magnetosphere, a magnetic bubble surrounding the planet; the size and shape of the magnetosphere change in response to the blowing of the solar wind, the constant stream of charged particles flowing from the Sun. The magnetosphere is crucial to life on Earth; it shields the atmosphere, as well as life on the surface, from damage by the solar wind and by even more energetic cosmic rays. But close in, Earth’s magnetic field lines trap and accelerate free-floating particles, largely protons and electrons, and bounce them back and forth between the poles of the planet. Those zones of trapped, agitated particles make up the Van Allen belts that Explorer I flew through. It was discovered that the belts took the form of two concentric rings: The inner belt extends from an altitude of about 1,000 to 6,000 kilometers above Earth, whereas the outer belt spans from about 13,000 to 60,000 kilometers. Earth’s Van Allen belts are imperfect shields, however. High-speed particles can leak from the belts and collide with molecules in the atmosphere, giving rise to aurora displays. If there is a major magnetic eruption on the Sun, the resulting outrush of particles may break through the outer magnetosphere and overload the Van Allen belts in more destructive ways. The rapid injection of particles into the belts can damage the circuitry and solar panels on satellites in orbit; swarms of protons and electrons released when solar wind particles crash into the atmosphere induce electrical currents that can overload terrestrial power systems and cause blackouts. Almost exactly a century preceding the Explorer I launch, on the night of August 28 to 29, 1859, people around the world got to witness what happens when an enormous solar storm overwhelms Earth’s magnetosphere. The New York Times reported that thousands of New Yorkers watched “the heavens…arrayed in a drapery more gorgeous than they have been for years.” An even more spectacular aurora display occurred on September 2, when the sky lit up as far south as Central America in the Northern Hemisphere. Disturbances in Earth’s magnetic field were so powerful that magnetometer readings were driven off their scales. Telegraph networks were unusable for nearly eight hours in most parts of the world due to high-energy particles in the atmosphere. In several regions, operators reported that their telegraphs were sparking from the electrical current induced by the aurora. Earth had experienced a one-two punch of solar storms the likes of which have not been recorded since. Humanity was just beginning to develop electrical technology in 1859. There were no high-power electrical lines crisscrossing the continents, nor were there sensitive satellites orbiting Earth. In 1989, just before the rise of the Internet and GPS systems, a smaller but still potent solar storm demonstrated the heightened risk. The 1989 storm induced huge ground currents that knocked out Quebec’s electrical power grid and caused problems at 200 sites in the United States, particularly in regions situated on igneous rock because it resists conduction and therefore flows current into nearby wires. If another solar event like the one in 1989 happened today it could disrupt global communications, causing chaos for days. Another 1859-style superstorm could knock out some power grids and communications networks for weeks or more. Our Sun operates on an 11-year cycle of activity, and today it is near the maximum of that pattern, meaning it could at any time produce large-scale events. In mid-July 2012, a solar storm of immense power narrowly missed the Earth; had it happened a week earlier, the planet might have been in the direct path of the blast. My colleagues and I are vigorously pursuing studies of space storms and the changes in our near-Earth space environment, which we lump under the term space weather. There is a pressing need for our technological society to understand in ever better detail the workings of the space environment around us. A clearer picture of the dynamics of the Van Allen belts is one important piece of this puzzle. Space Storm Damage What happens to satellites during space storms is of great practical importance. After the pioneering work of Van Allen and his coworkers in the United States, along with their counterparts in the Soviet Union, there was an explosion of interest in the use of space for human needs. Over just a few years in the late 1950s and early 1960s, space hardware went from technological demonstration and scientific curiosity to full-fledged societal imperatives. Earth satellites were launched into space to meet needs for communication, navigation, weather observations, remote Earth sensing, and military reconnaissance. Today the Earth is circled by spacecraft from just above our atmosphere to distances of tens of thousands of kilometers above Earth’s surface. It would be almost inconceivable to try to imagine our modern U.S. society without the capabilities provided by spacecraft systems. But any of the many hundreds of spacecraft operating in Earth orbits today can be damaged by space radiation if the circumstances are right. In 2003, 46 of the 70 satellite failures reported that year occurred during a geomagnetic storm in October. When high-energy protons and other ions hit orbiting spacecraft, they often leave ionization tracks in electronic chips. These tracks can upset spacecraft computer memories and otherwise disrupt sensitive electronics. As a result, satellite solar power panels may be damaged, optical tracker systems may become confused, and spacecraft command-and-control software may be scrambled. High-energy protons and ions may also injure, and potentially kill, astronauts who are in space during a major solar particle event. Manned launches have had to be rescheduled as a result, a major obstacle to long missions such as ones that might go to Mars. The high-energy protons in the inner Van Allen zone are especially a continuing risk to satellites and humans alike. Energetic electrons in the space environment can also be devastating to spacecraft. They can readily penetrate even thick spacecraft shielding and bury themselves in insulating materials, such as coaxial cables or electronics boards, deep within spacecraft systems. As charge builds up in the insulating materials, a powerful internal electrical discharge can occur, much like a miniature lightning strike. Numerous recent spacecraft failures have been attributed to this mechanism. Another space weather effect is known as surface charging. Lower energy electrons cannot penetrate the shielding but can accumulate on insulating satellite surfaces. As with interior insulators, charge buildup on the surface may lead to a powerful, disruptive discharge, generating electrical signals in the spacecraft’s vicinity that can scramble and disorient the satellite and its subsystems. A Third Belt In light of the world’s dependence on Earth-orbiting platforms, it must be realized that every one of these spacecraft fly through—essentially continuously—the high-energy radiation environment that Van Allen’s group discovered over five decades ago. Thus, one of the most enduring and persistent aspects of space weather is the hostile radiation belts girding the Earth. Probes have returned data showing that the Van Allen belts wax and wane in intensity, depending on both local conditions and Sun activity. Even 50-plus years after their discovery, we still need a deeper and more insightful comprehension of the Van Allen belts’ behavior.

#### Space col is key to avert extinction.

George **Zarkadakis 19**. Writer, science communicator, Artificial Intelligence engineer, and digital innovation professional, writes nonfiction books, PhD in Artificial Intelligence. 12-26-19. "Abandoning the metropolis: space colonisation as the new imperative." George Zarkadakis. https://georgezarkadakis.com/2019/12/26/abandoning-the-metropolis-space-colonisation-as-the-new-imperative/

Space colonization is not only the subject of fiction but of serious science too. The late physicist Stephen Hawking argued that unless colonies were established in space the human race would become extinct. There are several natural phenomena beyond our control that could spell our obliteration. Over a long enough period of time our planet is vulnerable to catastrophic meteorite strikes, or getting exposed to the deadly radiation of a nearby supernova explosion. As our Sun burns its fuel it will start to expand and, in a few million years, will scorch Earth. We can also self-destruct by waging nuclear war, or by tilting our planet’s climate towards a runaway greenhouse effect. Space colonization is therefore the ultimate insurance policy of long-term human survival[4]. Physics and Biology: how to solve the challenges of interstellar travel But colonizing space is hard. Three are the main problem categories for humans surviving away from Earth over an indefinite period of time. The first, and probably easiest to solve, is finding a place suitable for colonization. Our solar system provides several possible habitats, the most obvious ones being of course the Moon and Mars. The Jovian moons could also be colonization targets. The Artemis Project[5], a private venture to establish a permanent, self-sustainable human base on the Moon, has proposed the Jovian moon Europa as an alternative future habitat, given the possibility of a hot interior and a liquid ocean of water under the icy surface, both of which could provide for a sustainable human base. Colonizing the Solar System could be a stepping-stone for venturing to worlds beyond, of which there are aplenty. In 2009 NASA launched the Kepler space telescope to discover Earth-size planets orbiting other stars in habitable zones. More than 1,300 planets have been discovered so far, in about 440 star systems; the nearest planet may be “only” 12 light years away. Based on Kepler’s findings scientists estimate that there could be as many as 11 billion rocky, Earth-like planets orbiting habitable zones of Sun-like stars in our Galaxy. The possibilities for expanding humanity’s reach in the cosmos are truly astronomical.

#### Russia war good – we’d go first, we’d win, causes minimal damage, and they would surrender

David J. Lonsdale 19 (David Lonsdale is the Director of the Centre for Security Studies at the University of Hull, UK. 5/17/2019. “The 2018 Nuclear Posture Review: A return to nuclear warfighting?” https://www-tandfonline-com.proxy.lib.umich.edu/doi/full/10.1080/01495933.2019.1573074)

The important question is: what objectives would the U.S. pursue within a nuclear conflict, and how would they be achieved? It appears that the primary objectives sought would be damage limitation (an important component of warfighting) and the reestablishment of deterrence. This fits with the preliminary qualifying statement to this section of the review, in which it is stated that the U.S. would use nuclear weapons in compliance with the law of armed conflict.86 Indeed, the NPR is at pains to note that nuclear forces would only be used for defensive purposes. One assumes that this rules out counter-value targeting (deliberate attacks against enemy population centers). This leaves counterforce operations as the only option. Strikes against enemy nuclear forces and their command and control, in conjunction with active ballistic missile defenses (BMD), would help ensure damage limitation for the U.S. and its allies.87 A focus on counterforce options is reminiscent of later Cold War strategy, when the U.S. increasingly procured weapon systems with increased accuracy and penetrative capability designed for warfighting. Indeed, Lieber and Press argue that increases in accuracy and remote sensing have enhanced the potency of counterforce options, to the point that low-casualty counterforce options are possible for the first time.88 One can reasonably assume, although it is not explicitly noted in the review, that the restoration of deterrence would be achieved through a combination of intra-war deterrence by denial (as noted above in relation to counter-escalation strategies) and punishment for coercive purposes. Inclusion of the latter is premised on references to “unacceptable consequences” resulting from nuclear attack elsewhere in the NPR. 89 However, in the face of no counter-value targeting, it is reasonable to question how these costs would be inflicted. There are three possible answers, although none of them is discussed in the NPR. First, it may be that the enemy values highly their nuclear forces; so that the loss of them would inflict unacceptable costs. Alternatively, there may be an unwritten assumption that counterforce strikes would inevitably produce “bonus” counter-value damage. Much of the nuclear force infrastructure (including command and control, airbases, etc.) is within or near population centers. Thus, even a limited counterforce strike is likely to have a significant detrimental effect on counter-value targets. This assumption, however, is somewhat thrown into question by the stated desire to procure accurate limited-yield weapons and to operate within the norms of the war convention. Low-yield accurate weapons would be ideal for counterforce missions and would minimize damage to counter-value target sets. Thus, bonus damage is likely to be limited. Finally, although again not explicitly noted in the NPR, perhaps there is a return to the notion of attacking targets associated with political control. Yet again, though, concerns over collateral damage would likely restrict a campaign aimed at the means of political control. We are, thus, left with many questions concerning how the coercive effects of nuclear weapons would be administered. This is problematic, for as Thomas C. Schelling eloquently noted, “The power to hurt can be counted among the most impressive attributes of military force.” 90 It has to be concluded that the uncertainties in this area of strategy reflect either a paradox or incomplete strategic thinking in the NPR. Clarity on these matters would be welcome, especially as it would enhance deterrence credibility still further. Although countervailing is back on the agenda in the 2018 NPR, there is no mention of prevailing in a nuclear conflict. Indeed, the review quotes Defense Secretary Mattis, echoing the early thoughts of Brodie, that nuclear war can never be won, and thus must never be fought.91 This is both curious and disappointing from a warfighting perspective, and speaks to the need for the further development of strategic thinking in U.S. nuclear strategy under Trump. Damage limitation and the reestablishment of deterrence are perfectly admirable goals within the context of nuclear conflict. However, if the U.S. is to achieve its objectives in a post-deterrence environment, it must have a comprehensive theory of victory. Damage limitation and the reestablishment of deterrence are limited negative objectives. They do not provide a positive driving force for the use of nuclear weapons. To reiterate, victory refers to a policy objective that must be achieved in the face of the enemy. And, as Clausewitz reminds us, the will of the enemy must be broken by destroying his ability to resist, or putting him in such a position as his defeat is inevitable.92 If we consider the conditions under which U.S. nuclear weapons could be used, as stipulated by the 2018 NPR, then we can assume that an enemy power (likely Russia, China, North Korea, or a state-sponsored terror group) has launched a substantial attack on either the U.S. or one of its allies. We can think in terms of a Russian assault on the Baltic States, a North Korean attack on South Korea, or perhaps a Chinese invasion of Taiwan. Alternatively, the U.S. may have been subjected to a substantial strategic attack, involving either weapons of mass destruction (including biological or chemical) or a crippling cyberattack. In any of these scenarios, more expansive objectives would be required. As Lieber and Press note, “In some cases, wars may be triggered by events that compel U.S. leaders to pursue decisive victory, conquest, and/or regime change.” 93 Thus, in order to achieve its objectives, the U.S. would variously need to: punish an aggressor to reinstate deterrence; defeat enemy forces for damage limitation or to reclaim lost territory; and, in the North Korean case, presumably overthrow a communist regime. In some of these cases, damage limitation and the reestablishment of deterrence would not be enough. Enemy forces would have to be defeated, removed, destroyed, or coerced (to withdraw from allied territory). Any operations in pursuit of these goals would need a theory of victory built on a detailed understanding of the use of nuclear weapons in the service of military objectives; i.e., nuclear warfighting. This could include defeating enemy nuclear forces for force protection of U.S. and allied conventional forces. Alternatively, U.S. nuclear forces may be required to defeat regionally superior enemy conventional forces. And yet, as previously noted, the NPR rules out a return to nuclear warfighting. This is a significant disjuncture in U.S. nuclear strategy. It is even more curious when one considers the range of modern forces the Trump administration seeks to acquire under the 2018 NPR.

### AT: Nuke Winter

#### Airburst and low yield solve

Keir A. Lieber and Daryl G. Press 9 {Keir Lieber is Director of the Security Studies Program and Associate Professor in the Edmund A. Walsh School of Foreign Service at Georgetown University. He holds a joint appointment in the Department of Government. Daryl Press received his PhD from the Massachusetts Institute of Technology. His research focuses on international security and U.S. foreign policy. December 2009. “The Nukes We Need: Preserving the American Deterrent.” https://www.jstor.org/stable/20699714?seq=1#page\_scan\_tab\_contents}//JM

To illustrate the growth in U.S. counterforce capabilities, we applied a set of simple formulas that analysts have used for decades to estimate the effectiveness of counterforce attacks. We modeled a U.S. strike on a small target set: 20 intercontinental ballistic missiles (icbms) in hardened silos, the approximate size of China's current long range, silo-based missile force. The analysis compared the capabilities of a 1985 Minuteman icbm to those of a modern Trident II submarine launched ballistic missile.1 In 1985, a single U.S. icbm warhead had less than a 60 percent chance of destroying a typical silo. Even if four or five additional warheads were used, the cumulative odds of destroying the silo would never exceed 90 percent because of the problem of "fratricide," whereby incoming warheads destroy each other. Beyond five warheads, adding more does no good. A probability of 90 percent might sound high, but it falls far short if the goal is to completely disarm a 90 percent chance of destroying each target, the odds of destroying all 20 are roughly 12 percent. In 1985, then, a U.S. icbm attack had little chance of destroying even a small enemy nuclear arsenal. Today, a multiple-warhead attack on a single silo using a Trident II missile would have a roughly 99 percent chance of destroying it, and the probability that a barrage would destroy all 20 targets is well above 95 percent. Given the accuracy of the U.S. military's current delivery systems, the only question is target identification: silos that can be found can be destroyed. During the Cold War, the United States worked hard to pinpoint Soviet nuclear forces, with great success. Locating potential adversaries' small nuclear arsenals is undoubtedly a top priority for U.S. intelligence today. The revolution in accuracy is producing an even more momentous change: it is becoming possible for the United States to conduct low yield nuclear counterforce strikes that inflict . A U.S. Department or Defense computer model, called for the United States to tne Hazard Prediction and Assessment Conduct nuclear Strikes Capability (hpac), estimates the dispersion of deadly radioactive fallout in a given region that inflict relatively few after a nuclear detonation. The software uses Casualties. the warhead's explosive power, the height of the burst, and data about local weather and demographics to estimate how much fallout would be generated, where it would blow, and how many people it would injure or kill. Hpac results can be chilling. In 2006, a team of nuclear weapons analysts from the Federation of American Scientists (fas) and the Natural Resources Defense Council (nrdc) used hpac to estimate the consequences of a U.S. nuclear attack using high-yield warheads against China's icbm field. Even though China's silos are located in the countryside, the model predicted that the fallout would blow over a large area, killing 3-4 million people. U.S. counterforce capabilities were useless, the study implied, because even a limited strike would kill an unconscionable number of civilians. But the United States can already conduct nuclear counterforce strikes at a tiny fraction of the human devastation that the fas/nrdc study predicted, and small additional improvements to the U.S. force could dramatically reduce the potential collateral damage even further. The United States' nuclear weapons are now so accurate that it can conduct successful counterforce attacks using the smallest-yield war heads in the arsenal, rather than the huge warheads that the fas/nrdc simulation modeled. And to further reduce the fallout, the weapons can be set to detonate as airbursts, which would allow most of the radiation to dissipate in the upper atmosphere. We ran multiple hpac scenarios against the identical target set used in the fas/nrdc study but modeled low-yield airbursts rather than high-yield groundbursts. The fatality estimates plunged from 3-4 million to less than 700 a figure comparable to the number of civilians reportedly killed since 2006 in Pakistan by U.S. drone strikes. One should be skeptical about the results of any model that depends on unpredictable factors, such as wind speed and direction. But in the scenarios we modeled, the area of lethal fallout was so small that very few civilians would have become ill or died, regardless of which way the wind blew. Critics may cringe at this analysis. Many of them, understandably, say that nuclear weapons are and should remain unusable. But if the United States is to retain these weapons for the purpose of deterring nuclear attacks, it needs a force that gives U.S. leaders retaliatory options they might actually employ. If the only retaliatory option entails killing millions of civilians, then the U.S. deterrent will lack credibility. Giving U.S. leaders alternatives that do not target civilians is both wise and just

#### Best climate simulations

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>)

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

#### Islands

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)

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.